ptember/October 1978

EW ENGLAND

THE NATURE CONSERVANCY NEWS

We're Building An Ark

It doesn't really look like Noah's ark, but it's the same idea. The Nature Conservancy is busy finding and protecting the wildlife and plants threatened now by a flood of development.

It is a big job, but since 1950, over 1.1 million acres have been preserved—home to millions of birds, animals, insects and plants, many rare or endangered. So far we have created more than 670 Conservancy sanctuaries.

The sanctuaries protect much more than wildlife. Consider: Many life-saving medicines originated in natural sources—penicillin, quinine, digitalis, streptomycin, aureomycin. The list is much longer.

There is every reason to expect future discoveries. Is a cure for cancer hidden in the chemistry of a tiny forest orchid?

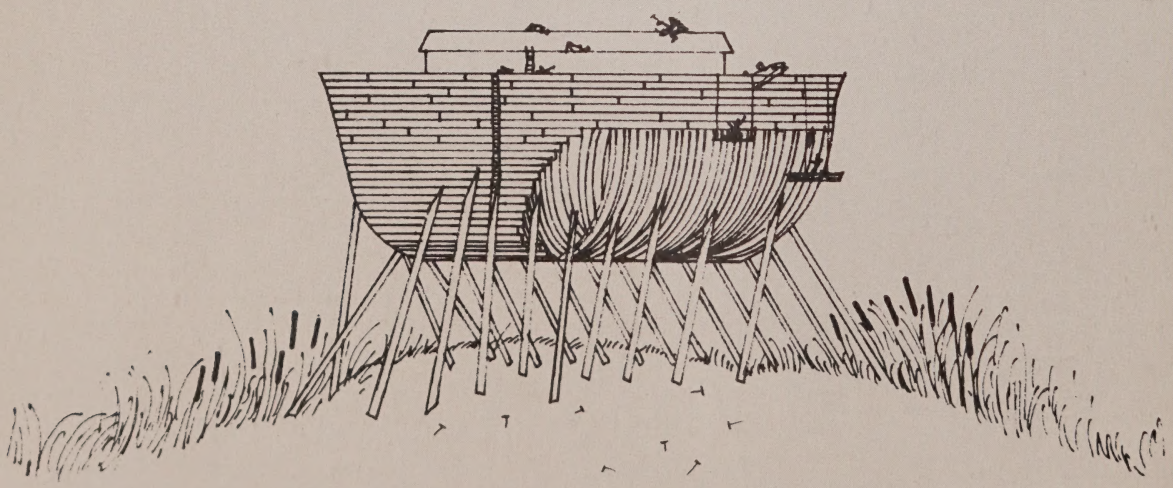
Wild grasses yielded wheat and corn. Even today, the wild strains help keep the domestic forms healthy.

But what about tomorrow? Does the secret of a new high energy food lie in the genes of a prairie grass? Without an ark we will never know.

Unfortunately, today, many species are unprotected, sanctuaries not created. Yet the rain clouds are gathering and we need to move quickly.

Researchers estimate that we now lose, for all time, one species each year.

So much is at stake. Help build the ark while we still have time. We owe it to Noah, ourselves, and the future.



Pick up a hammer and join us.

Give to the General Fund.

THE NATURE CONSERVANCY NEWS

VOLUME 28, NUMBER 5
SEPTEMBER/OCTOBER, 1978

BOARD OF GOVERNORS

OFFICERS
CHAIRMAN OF THE BOARD
John E. Andrus III, *Minnesota*
VICE CHAIRMEN
Thomas L. McCall, *Oregon*
Nathaniel P. Reed, *Florida*
Mason Walsh, Jr., *Pennsylvania*
SECRETARY
Robert B. Anderson, *New Mexico*
TREASURER
Charles C. Haffner III, *Illinois*

F. E. Balderston, *California*
Robert Bennett, *District of Columbia*
Helen Black, *Ohio*
William D. Blair, Jr., *Maryland*
Robert O. Blake, *District of Columbia*
Walter J. Bogan, Jr., *District of Columbia*
Frank D. Boren, *California*
Alexander Calder, Jr., *New Jersey*
G. William DeSousa, *Connecticut*
Noel Lee Dunn, *North Carolina*
John H. Filer, *Connecticut*
Richard H. Goodwin, *Connecticut*
R. Philip Hanes, Jr., *North Carolina*
Charles Hedlund, *New Jersey*
Kenneth E. Hill, *California*
John A. Hillenbrand II, *Indiana*
Roy E. Larsen, *New York*
Dan W. Lufkin, *Connecticut*
M. Graham Netting, *Pennsylvania*
John B. Oakes, *New York*
Mrs. Walter H. Page, *New York*
Ruth Patrick, *Pennsylvania*
A. Timon Primm III, *Missouri*
Mrs. David Rockefeller, *New York*
G. Jon Roush, *Montana*
Francis W. Sargent, *Massachusetts*
Stephen H. Spurr, *Texas*
Hubert W. Vogelmann, *Vermont*
Richard S. Weinstein, *Florida*
Mason Walsh, Jr., *Pennsylvania*

PRESIDENT
Patrick F. Noonan

THE NATURE CONSERVANCY NEWS
is published bimonthly by The Nature Conservancy, 1800 North Kent Street, Arlington, Virginia 22209.

EDITORIAL STAFF:
Sue E. Dodge, *EDITOR*
Anne M. Byers, *Senior Editor/Writer*
Susan Bournique, *Photo Editor*

Copyright 1978
The Nature Conservancy

NEW ENGLAND: Introduction 4
Bradford C. Northrup

Map: 20 New England Highlights 6

The Mountains 8
Louis Borie

Bogs and Ponds: Nature's "Liquid Assets" .. 12
Dr. Richard H. Goodwin

The Coast: Changed and Unchanged 16
Richard Saltonstall, Jr.

The Rivers 20
Ogden Tanner

The Forests 23

New Projects 25

Notes 29

Chapter Update 30

COVER: Autumn foliage, American beech (*Fagus grandifolia*). Photo by Whitney Beals.

The Nature Conservancy is a national conservation organization committed to the preservation of natural diversity by protecting lands containing the best examples of all components of our natural world.

To date the Conservancy and its members have been responsible for the preservation of 1,304,569 acres of forests, marshes, prairies, mountains, and islands: home to rare and endangered species of wildlife and plants. 2,004 projects have been completed since the acquisition of the first preserve in 1954. Approximately 60% of all preserves are retained by the Conservancy and managed by volunteer land stewards.

A membership, non-profit organization, the Conservancy was incorporated in 1951 in the District of Columbia for scientific and educational purposes.

NEW ENGLAND

There is a story about a Texan who, having heard about the legendary beauty of New England, traveled north to Vermont in search of some land. As luck would have it, he chanced upon a rustic, home-made sign proclaiming a farm for sale, and was able to prevail on the owner for a tour of the property. The Texan clearly was not impressed. At the end of the tour he boasted that where he came from he could get in his car in the morning, drive all day, and still not reach the end of his property. Also unimpressed, the Vermonter allowed as how he too once had a car like that.

Like the Texan and the Vermonter, people view land in different ways, reflecting the variations of land use and ownership throughout the United States. It is interesting to note the differences among our country's regional landscapes along with the efforts that have been made to protect them. The articles contained in this issue of the *News* highlight the many fascinating natural features of New England and how The Nature Conservancy is working to save outstanding examples of each.

A common theme in the articles is the exceptionally long history of manipulation and alteration of land in the northeast. Settlers were in New England exploiting the land earlier than other regions of the country. The evidence is everywhere. Stone walls are found in seemingly wilderness areas. A 7-acre tract in a Vermont state park contains the only known protected parcel of original forest in the state.

Fortunately, the shortsightedness of this early manipulation alarmed New Englanders and led to pioneering efforts in private land conservation. The Appalachian Mountain Club, founded in 1879, is the oldest mountaineering and conservation organization in the country. The Massachusetts Audubon Society and the Trustees of Reservations were both active in private land protection before the turn of the century.

New Englanders invented the municipal conservation commission and the local land

An Introduction
By Bradford C. Northrup
Eastern Regional Vice-President

trust (there are presently over 65 trusts in Connecticut alone). A quick glance at the Conservation Directory shows 17 private, regional, and state organizations active in New England land conservation along with the Conservancy.

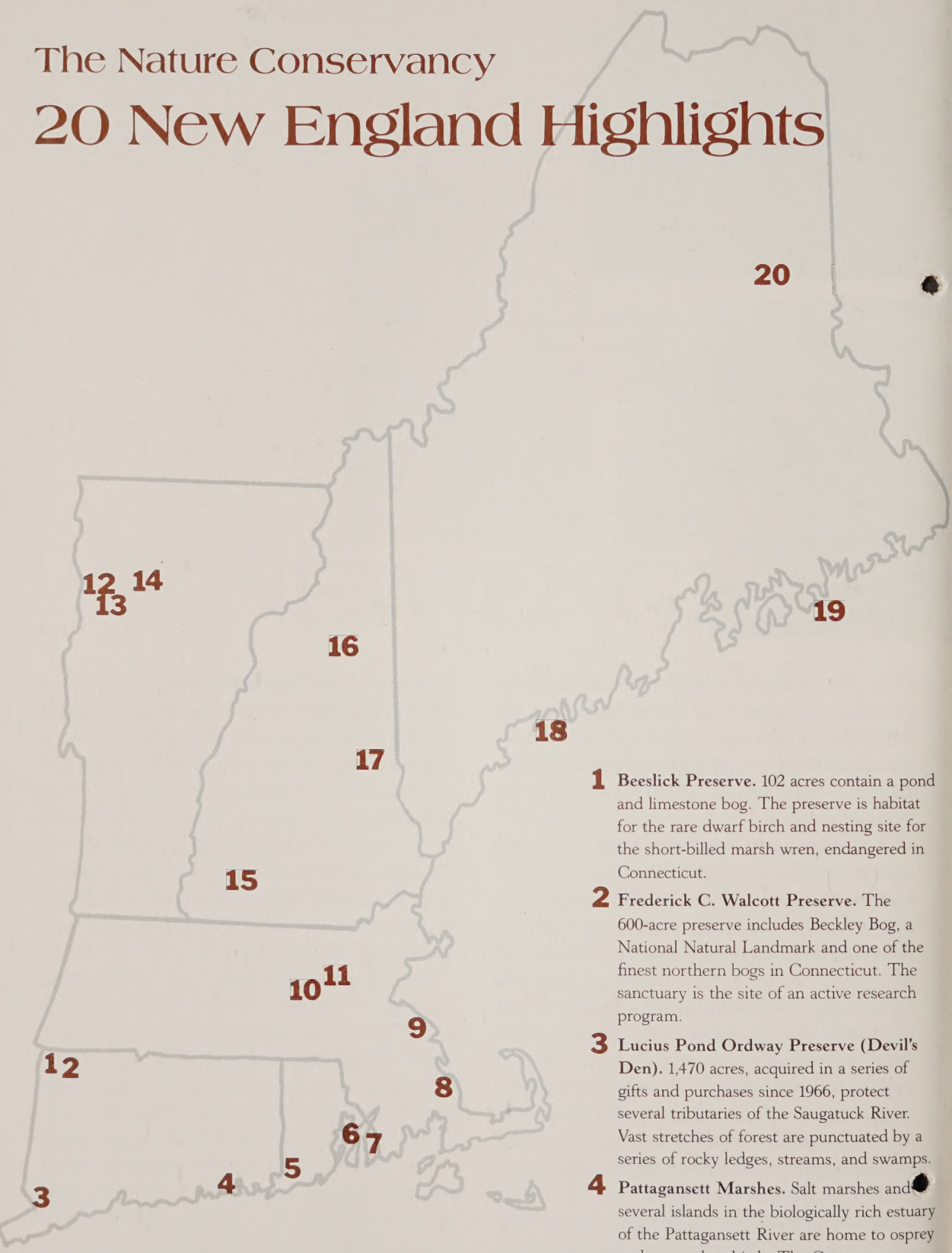
It is appropriate that the early history of the Conservancy is closely tied to New England. The long legacy of individuals and organizations intent on protecting land enabled early Conservancy efforts to flourish in the region. Three of the oldest and strongest Conservancy chapters in the country thrive in Maine, Connecticut, and Vermont. In other New England states, cooperation and affiliation with strong statewide organizations like the Society for the Protection of New Hampshire Forests has led to active Conservancy protection and stewardship programs throughout the region.

New England has 222 Conservancy projects to its credit. This figure represents about 20 percent of *all* preserves protected by the Conservancy—certainly not a bad record for a section of the country equal in size to the State of Missouri. The Conservancy retains 77 percent of the areas it has acquired in New England, and these preserves are managed by volunteer stewardship committees. This is considerably higher than the Conservancy's national average—50 percent retained—and reflects New England's long history of private land conservation, as well as the Yankee attitude about individual effort and taking care of one's own affairs.

Behind the accomplishments described in this issue of the *News* are the individual volunteer efforts of countless New Englanders. Their strong desire to protect and watch over the natural beauty of their six New England states have helped to produce a remarkable record for the Conservancy in the region. This special New England spirit to preserve the region's best natural lands continues to provide a high standard for The Nature Conservancy's work nationwide.

The Nature Conservancy

20 New England Highlights



1 Beeslick Preserve. 102 acres contain a pond and limestone bog. The preserve is habitat for the rare dwarf birch and nesting site for the short-billed marsh wren, endangered in Connecticut.

2 Frederick C. Walcott Preserve. The 600-acre preserve includes Beckley Bog, a National Natural Landmark and one of the finest northern bogs in Connecticut. The sanctuary is the site of an active research program.

3 Lucius Pond Ordway Preserve (Devil's Den). 1,470 acres, acquired in a series of gifts and purchases since 1966, protect several tributaries of the Saugatuck River. Vast stretches of forest are punctuated by a series of rocky ledges, streams, and swamps.

4 Pattagansett Marshes. Salt marshes and several islands in the biologically rich estuary of the Pattagansett River are home to osprey and many shorebirds. The Conservancy owns 48 acres, with an additional 20 acres protected by conservation easement.

5 **Ell Pond/Long Pond.** Cedar swamp, hemlock, and rock outcroppings surround two pristine ponds. A bog and abundant rhododendrons are highlights of the complex. Ell Pond is a National Natural Landmark.

6 **Prudence Island.** In the heart of Narragansett Bay, Prudence Island is the site of one of the largest salt marsh concentrations in Rhode Island. The Conservancy purchased 670 acres on the north end of the island to protect the marshes which provide habitat for large populations of shellfish and shorebirds. The island has been conveyed to the state as part of the Bay Islands Park System.

7 **Fogland Marsh.** The last undisturbed salt marsh remaining in Rhode Island, the 50-acre area is a fertile nursery ground for fin and shell fish. A creek flows through the marsh into the Sakonnet River.

8 **Halfway Pond Island.** Lying in the middle of a 230-acre freshwater pond, the island supports one of the last virgin forests in the state, with some trees at least 175 years old. Four species of holly and several wildflowers uncommon in southeast Massachusetts occur here.

9 **Black Pond.** The 78-acre forested preserve surrounds Black Pond, a quaking bog. The bog is habitat for uncommon plants such as pitcher plant, sundew, sedges, and three types of orchid.

10 **Beaver Brook Valley.** The 80-acre preserve includes over one mile of one of the most outstanding glacial eskers found in the state, as well as surrounding marsh and swamp. An esker kettlehole, a rare formation, is located on the esker's ridge.

11 **Hy-Crest Ranches.** 480 acres on the Nashua River serve as a major resting area for migrating waterfowl, especially black duck, mallard, wood duck, and Canada goose. The preserve was transferred to the Massachusetts Division of Fisheries and Wildlife.

12 **Colchester Bog.** The 200-acre sphagnum bog is dominated by leather-leaf, sweet gale, and cotton grasses. The bog is geologically significant because it was formed between two islands in Lake Champlain before the lake rose to present levels. The preserve was conveyed to the University of Vermont as part of the University's natural areas preserve system.

13 **H. Laurence Achilles Natural Area.** Some 500 acres of woodlands and marshes surround Shelburne Pond, the only completely undeveloped large pond in western Vermont. Limestone ledges and rocks protrude along much of the shoreline. The area has been conveyed to the University of Vermont.

14 **Burt Forests.** Over 15 square miles of rugged land include several summits over 3,000 feet, a unique glacial lake, sheer cliffs, a spectacular waterfall, and vast forests. Virgin spruce-fir forest covers the upper mountain slopes. The land was acquired as additions to three state forests.

15 **Louis Cabot Preserve.** The 400-acre peninsula between Lakes Spoonwood and Nubanusit provides nesting habitat for osprey and commands a spectacular view of both lakes. The preserve has been transferred to Keene State College of the University of New Hampshire.

16 **Crawford Notch.** The 460-acre tract is a dramatic gateway to the White Mountains and an important addition to White Mountain National Forest. Crawford Path, the oldest continuously used and maintained trail in the U.S., begins on the land and leads to the summit of Mt. Washington.

17 **Stamp Act Island.** The 100-acre island includes pristine shoreline, sandy beaches, and a swamp. The forest-covered island is an important nesting site for loons and great blue herons.

18 **Morse Mountain.** Lying between two tidal rivers, the tract includes salt marsh and scenic beach backed by extensive dunes and by the ledges and woodlands of Morse Mountain. Least terns, piping plovers, and other shorebirds nest here. The Conservancy owns 30 acres, with an additional 600 acres protected by conservation easement.

19 **Petit Manan.** The 1,700-acre coastal peninsula includes rock outcroppings, heath and bog, a freshwater pond, and large areas of forest. Ospreys and bald eagles nest on the preserve, which was acquired on behalf of the U.S. Fish & Wildlife Service.

20 **Crystal Bog.** One of the largest and finest northern sphagnum-heath bogs in the continental U.S., the 3,800-acre National Natural Landmark supports at least 10 species of orchid, as well as cotton grass, pitcher plant, and sundew.

The Mountains

By Louis Borie

Green Mountains

From the layered sands of ancient inland seas the mountains of New England rose in small, isolated uprisings of the great Appalachian Revolution. This great revolt produced some of North America's oldest hills, the Appalachians, whose numerous parallel ridges stretch from the coast of Newfoundland to the Georgian highlands. Only the rocks of the Canadian shield, which find their southern extension in New York's Adirondack Mountains, can claim seniority.

At one time New England's peaks—and other parts of the Appalachians—may have towered high like their younger neighbors to the west, the mighty Rockies and the Sierra Nevadas, two ranges that continue to be pushed above the surrounding plains. But time has been at work on New England's hills. Perhaps two or three times in the last 400 million years the mountains have been forced up like wrinkles in the earth's ever-shifting mantle, only to be torn down by their greatest foe, the forces of erosion that constantly tug at their flanks.

For the moment at least, they've lost the battle. Slowly, imperceptibly to man's relatively short-term gaze, these hills—the White Mountains of New Hampshire, the Green Mountains of Vermont, and other lesser ranges—are returning to the seas that produced them, carried along in the trickles and torrents which course their slopes and eventually find their way to the valleys below. In some future age they'll be part of another range of mountains, in a different part of a vastly altered earth.

For the most part New England peaks are gentle, their rounded, tree-clad summits rising several thousand feet above the surrounding lowlands. Just a few poke their rocky crests above the trees. Some of the worst weather in the world rages over the exposed summit of Mt. Washington, the unquestioned ruler of New Hampshire's White Mountains, and at 6,288 feet the tallest peak in the northeastern United States. The highest wind ever recorded, 231 miles per hour, was witnessed by the Mt. Washington Observatory crew on the exposed ridge of the mountain in 1931. The forces of nature also show their power on the treeless summits of Mt. Katahdin and Mt. Mansfield, the highest peaks in Maine and Vermont.

In general, however, these aging mountains have been friendly to people, whether they were the great tribes of the Algonquin Indians, who roamed the hills in search of wild animals for food, or the intruders from Europe—the settlers who landed at nearby Pilgrim Rock and straightaway spread westward, cutting the trees for lumber and clearing the slopes for agriculture. Over the centuries New England's mountains have given freely of their precious natural resources—their water, their timber, their untamed beasts.

They continue to do so today. The frugal nature of the Yankee spirit has kept the often repeated story of "abundance to dearth" from being retold here. But numbers and simple geography threaten New England's hills just the same. The northeast is the most heavily populated region of North America, and the cities are creeping ever outward. People *like* mountains, and understandably so. To be among them is to be inspired. John Muir, explorer of the high Sierras and founder of the Sierra Club, best described the feeling. "Climb the mountains and get their good tidings," he said. "Nature's peace will flow into you as sunshine flows into trees. The winds will blow their own freshness into you and the storms their energy, while cares will drop off like autumn leaves."

Autumn bears a riot of color to New England's mountains, a display of hues not likely to be found many other places on the earth. Winters are long and frigid, with howling winds and snow depths of 150 inches not uncommon. Spring brings a fresh tinge of green, and in summer the full verdant splendor arrives.

Water is the mountains' most important gift. The hills of New England serve as a vast storehouse for the plentiful amounts of water—up to 100 inches a year—that reach their slopes in the form of rain, fog, snow, and various other forms

the
General Fund
needs
your
support

the General Fund

The Nature Conservancy is a national conservation organization whose resources are entirely devoted to the preservation of land.

The Conservancy's General Fund helps provide the resources necessary to defray the organization's annual operating expenses. It is dependent upon public support.

Only with your help can the Conservancy meet the increasingly complex and urgent demands of natural area conservation.

Please give to the General Fund. Your donation can make a difference in the future of our environment.

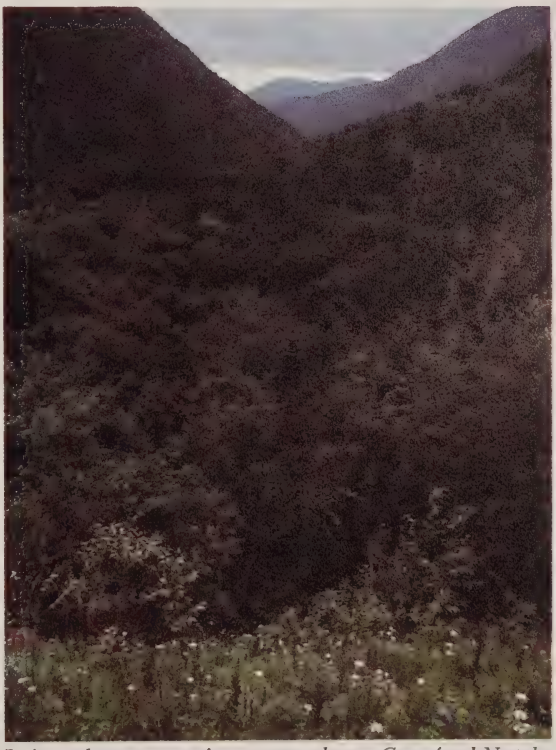
of precipitation. The meltwaters of spring produce torrents and floods, but for the most part the mountains are careful conservationists. They ration their water prudently, continually feeding the streams and recharging the aquifers below their slopes, insuring an adequate supply of water for untold species of plants and animals—including humans.

The mountains also provide remote areas for species of birds and mammals who need an isolated habitat to survive. Now that much of New England is returning to its original forest cover, populations of solitary animals like black bear, fisher, and bobcat, once threatened, are increasing. Careful management by the fish and game departments of the New England states has been invaluable. Without the seclusion provided by mountain sanctuaries, however, some species might have been lost from the region forever.

Looking at the exposed rocks on some of New England's mountains is like peering into the past, for these headlands are outdoor geologic laboratories for everyone from an inquisitive hiker to a serious student. The joints, faults, and folded layers of minerals are dramatic evidence of the deliberate might of the mountain building processes that produced them. Examples of glacial action are apparent also, in the grooves or "striations" channeled in the bedrock by the material pulled along as the ice advanced as well as in enormous boulders or "erratics" left strewn across the hills as the ice succumbed to the warming climate. Eons of time are visible in a passing glance.

The forested slopes of the northern Appalachians are outdoor classrooms also—living lessons in the biotic zonation of vegetation. At the lower elevations, up to 2,400 feet, the slopes are clad with a mixture of American beech, yellow birch, and sugar maple. This deciduous zone gradually merges into a transition zone, where conifers like hemlock, red spruce, and balsam fir mix with deciduous species such as striped maple, mountain maple, and white birch. At about 2,900 feet the transition zone gives way to the coniferous or boreal zone, dominated by balsam fir and red spruce, with heart-leaved white birch also present. The few peaks that reach above the treeline have an added zone—the arctic-alpine zone, a mixture of lichens, heaths, sedges, and stunted, twisted firs which form a low, windswept tundra. These unique areas are tiny arctic outposts of plant life, further evidence of the Pleistocene when mile-high ice covered the hills and valleys of New England.

Although much of New England is returning to forest (Vermont's forest cover has increased from 25 percent to 75 percent in less than a century), most of the landscape was logged or cleared at



Left, a clear mountain stream; above, Crawford Notch, "Gateway to the White Mountains;" top, mountain sandwort, a species of the arctic-alpine zone.

one time. Few examples of totally undisturbed, climax situations remain. But those that do are often found on mountain slopes, too inaccessible for even the most determined logger or farmer. These climax stands of trees are important remnants of the original vegetation that covered the region—parts of our natural heritage that are all too rare.

Over the ages the mountains have endured the erosive forces of wind, rain, fire, and ice. They stand today a little less tall but as immobile as they did in their youth, hundreds of millions of years ago. Despite the mountains' seeming stability, however, there's one erosive force that continually threatens to alter their character—*Homo sapiens,* the eternal modifier. Millions live within a day's drive of New England's mountains, making them one of the most easily accessible natural resources in the country, and therefore one of the most threatened. For despite their solid appearance, mountains are extremely fragile environments. The lush vegetation covering their slopes hides a surprisingly thin layer of soil that has taken thousands of years to accumulate. When the soil is laid bare by misuse, it takes but one heavy rain for tons of mountain to be washed downhill into the valley. Countless years of nature's labor are undone in an instant.

The Nature Conservancy has taken an active role in protecting the valuable resources of New England's mountains. One of a number of projects undertaken by the Conservancy's Maine Chapter is Douglas Mountain, a 1,400-foot peak that rises abruptly as the first in a series of folds giving rise to the White Mountains 40 miles to the west. In all, the Douglas Mountain tract includes 150 acres of mountain summit with adjoining forest lands and a swamp. In the spring orchids are found growing among the wildflowers at the lower elevations, while at summer's end the mountain is rich with blueberries. The area has been used for a number of years by hikers who enjoy the sweeping panorama from the low tower that tops the rocky peak. Near the summit a former owner of Douglas Mountain placed the inscription NON SIBI SED OMNIBUS—not for one's self but for all.

The Conservancy has also helped preserve important mountain lands in the great peaks to the west of Maine, New Hampshire's historic White Mountains. In 1976 the Conservancy joined with other conservation groups to acquire a 467-acre tract of land at the northern gateway to Crawford Notch, one of several mountain passes that surround the towering mass of Mt. Washington. The specially formed Crawford Notch Coalition, which included the Conservancy, the Appalachian Mountain Club, and the Society for the Protection of New Hampshire Forests, worked together for over two years to preserve the key area. The tract has now been transferred to the U.S. Forest Service as part of the White Mountain National Forest.

The valuable addition contains a stand of virgin spruce and several lakes that give rise to streams whose waters eventually find their way to the Atlantic. Crawford Path, said to be the oldest continuously used trail in North America, starts on the property and winds its way toward the mountains of the Presidential Range.

The Conservancy's Vermont Chapter has played a leading role in acquiring mountain lands for eventual conveyance to the state for critical additions to state forests and parks. In 1970 the Vermont Chapter undertook its first major project—gaining title to 6,400 acres of forest in the northern Green Mountains. Six months of hard bargaining between representatives of the state, the Conservancy, and the owner of the lands—Laird Properties Inc., a New York based developer—resulted in the purchase of two separate parcels of land.

Both areas are heavily wooded with stands of beech, birch, maple, and mountain ash. The northern tract of 1,885 acres in the town of Stowe was immediately conveyed by Laird Properties to the state for addition to the adjacent Mt. Mansfield State Forest, while the southern parcel of 4,500 acres was bought by the Conservancy for eventual transfer to the state. Now part of the Camel's Hump State Park, this southern piece includes clear mountain streams, the 3,688-foot summit of Mount Ethan Allen, and a portion of the Long Trail—Vermont's "footpath through the wilderness." At the request of Laird Properties and with support from the Conservancy, the deed severely restricts the uses of the land above 1,800 feet, in accordance with studies of mountain areas conducted by Dr. Hubert Vogelmann, Chairman of the Vermont Chapter.

This past winter the Vermont Chapter concluded the largest project ever undertaken by the Conservancy in New England—the acquisition of 10,000 acres of wild mountain land from Burt Forests Inc., one of northern Vermont's oldest logging concerns. Accomplished with the assistance of the Federated Garden Clubs of Vermont, the Burt Forests project insured that the most outstanding, unspoiled country remaining in the Green Mountains will be held in trust for the State of Vermont.

Several mountain summits, an entire watershed system near Stowe, a picturesque notch surrounded by active beaver ponds, and one of the most spectacular waterfalls in the state lie within the boundaries of the four separate Burt Forests

The Burt Forests lands are important for their scenic beauty, as well as for their ecological integrity.

tracts, which all together total some 15 square miles. The largest tract of 6,000 acres starts on the southern flank of Mt. Mansfield, the state's highest peak, and includes Miller Brook Cirque, an outstanding geological feature said to be the best example of mountain glaciation east of the Rockies.

Long sought by the state as missing pieces in the Mt. Mansfield and Putnam State Forests and the Camel's Hump State Park, the Burt Forests lands will comprise the largest purchase of land for conservation purposes in Vermont history. Vermont Forests and Parks Commissioner James Wilkinson termed the event "a milestone for public land acquisition in Vermont." The scenic beauty and ecological integrity of the lands will be insured forever when the state buys the lands with matching funds from the federal Heritage Conservation and Recreation Service's Land and Water Conservation Fund over the next several years.

The potential for low impact recreation on the Burt Forests land is almost unlimited. Four miles of the Long Trail pass along the crests of several mountains in the uplands. The old logging roads that crisscross some of the lower elevation lands make the area ideal for cross-country skiing in the winter. The land adjoins several existing cross-country skiing trail systems, including the extensive trails of the well-known Trapp Family Lodge. Plans are being made for the maintenance of the trails on the Burt lands by the private cross-country operators, thereby creating the most extensive cross-country network in the eastern United States.

The Burt Forests project and others undertaken by The Nature Conservancy in the mountain areas of New England only serve to illustrate further how private and public interests can work together to preserve the remnants of unspoiled ecosystems that once existed across our country. The Conservancy's efforts insure that areas will still remain where natural processes can proceed forever unhindered, until the age-old peaks of New England complete their slow march to the sea.

Louis Borie is a free-lance nature writer and photographer. He authors a regular column in the *Vermonter*, a Sunday supplement to the *Burlington Free Press*. This past summer he also worked as a ranger-naturalist on Mt. Mansfield, Vermont.

Quincy Bog, New Hampshire

Bogs and Ponds:
Nature's "Liquid Assets"

By Dr. Richard H. Goodwin

Bogs and ponds were two of the habitats first recognized by The Nature Conservancy as being especially in need of preservation. These natural features are particularly prevalent in the glaciated portions of the United States, where depressions were excavated by the advancing glacier or created later by the melting of buried blocks of ice.

Shortly after the retreat of the glacier, these pockets were all filled with water. However, during the intervening 10 to 12 thousand years, many of them have become partially or wholly filled with various types of deposits. The poorly drained depressions accumulated organic material, which increased the acidity of the water, thus inhibiting decay by microbial action. This accelerated the filling process and the production of peat deposits. Such wetlands are known as bogs.

Bogs, although not as obviously useful to people for water supply or recreation as lakes, are highly significant as sponges that maintain the water table and reduce the potential of flooding at times of excessive precipitation. The role of bogs in flood control was dramatically illustrated during the severe flood of 1955 in the Pocono Mountain region of northeastern Pennsylvania, where many bridges were washed out. Two bridges of the type destroyed elsewhere in the region were still intact below the Tannersville Cranberry Bog, a natural area preserved by the Conservancy.

From a scientific standpoint, bogs are of special interest as a habitat for rare and unusual plants and animals. In southern New England bogs, for instance, one finds range extensions of plants common further north that were generally distributed in early postglacial times but that are unable to compete with the present more southerly flora now occupying the upland. Black spruce *(Picea mariana)* and tamarack *(Larix laricina)* are the trees occupying these acid sites along with an interesting assemblage of leathery-leaved shrubs belonging to the heath family: leather-leaf *(Chamaedaphne calyculata)*, labrador tea *(Ledum groenlandicum)*, bog-rosemary *(Andromeda glaucophylla)*, bog laurel *(Kalmia polifolia)*, sweet gale *(Myrica gale)*, and cranberry *(Vaccinium oxycoccos* and *V. macrocarpon)*. In the more open sites sphagnum moss usually forms a spongy mat in which one finds the buckbean *(Menyanthes trifoliata)*, lovely orchids—such as rose pogonia *(Pogonia ophioglossoides)*, grass pink *(Calopogon pulchellus)*, and various species of *Habenaria*—as well as the strange insectivorous plants: pitcher plant *(Sarracenia purpurea)*, sundews *(Drosera* spp.), butterwort *(Pinguicula vulgaris)*, and bladderworts *(Utricularia* spp.). These latter species satisfy their mineral requirements in a bog's nutrient-impoverished environment by digesting captured insects.

Lakes and ponds that have had sufficient flow through them to remove the organic acids have failed to fill with peat. Where these better-drained bodies of water have silted in, marshes or swamps have developed. These wetland habitats also have their own characteristic flora. The typical bog plants previously mentioned are usually absent, although transitional stages between bogs and marshes or swamps are frequently encountered, where a mixture of plant types occurs.

Ponds provide their own special conditions for unusual plants and animals. Shallow sandy shores, for instance, support certain species of rushes and sedges, pipeworts *(Eriocaulon* spp.), aquatic lobelia *(Lobelia dortmanna)*, pondweeds *(Potamogeton* spp.), floating heart *(Nymphoides cordata)*, bladderworts *(Utricularia* spp.), and other interesting aquatic plants. In areas underlain by limestone, alkaline conditions will support a different assemblage of species.

The New England states, having been entirely covered by the Wisconsin ice sheet of the Pleistocene Epoch (about two million years ago), are liberally sprinkled with bogs and ponds which have been aptly referred to as "liquid assets". Unfortunately, they have been subjected to manifold alterations and encroachments, especially in the more densely populated sections of the country. Water levels have been manipulated for water supply and water power. Wetlands have been filled for shore-

Above, a green frog in sphagnum moss; right: grass pink (top) and small yellow lady's slipper.

line development and by solid waste disposal. Construction of cottages, railroads, highways and industrial buildings, as well as drainage for agriculture and commercial exploitation of peat deposits have taken their toll. Other adverse impacts on bogs and ponds include eutrophication (reduction of dissolved oxygen needed for animal life) by fertilizer in run-off from cultivated fields and lawns and by nutrients seeping from septic tanks, siltation from damaged watersheds, pollution from sewage and industrial wastes, and overfishing and stocking procedures. Meanwhile, the flora of these wetlands have been destroyed by herbicides, trampling, and overzealous collecting of rare plants. Animal populations have also been reduced by over-collecting and pesticides. In view of the very limited area occupied by bogs and ponds, it is clear that they deserve high priority in the Conservancy's preservation program.

The first wetland to be acquired by the Conservancy in New England was Beckley Bog in the northwestern corner of Connecticut. Lying at the heart of what is now known as the Frederick C. Walcott Preserve—named in honor of the late Senator Walcott—is perhaps the finest example of an active spruce bog in south New England. In such bogs, the edges are gradually being filled in by a mat of living and dead sphagnum moss, on which higher plants grow. Ericaceous plants (belonging to the heath family) are growing on the moss that is invading Beckley Pond. Near the edge of this floating heath the peat is about 40 feet deep.

The bog was originally brought to the attention of the State's Natural Areas Committee by a Norfolk resident, Mr. Edward C. Childs. The purchase in 1956 of the initial 197-acre tract, which included Beckley Pond and Bog, was made possible by the successful completion of a $21,000 statewide fund-raising drive. Since then, the preserve has increased to 534 acres through a series of purchases and gifts of conservation easements, which now protect much of the surrounding upland.

In the latter part of the 19th Century, Beckley Pond was somewhat enlarged by a low dam to provide a railroad water tank with an improved source of water. Not long after the Conservancy's initial purchase, a colony of beavers became established. Their activity at the dam soon raised the water level another two to three feet, thereby flooding the margins of the pond and bog, further floating the bog heath, and regressing the forest

Beaver lodge at Beckley Bog, Connecticut, a National Natural Landmark.

succession. The beavers have also thinned the hardwood stands immediately around the pond, thus encouraging the development of sedge meadow and other herbaceous vegetation. A consultant for the National Park Service, in an evaluation of the area as a potential National Natural Landmark, recommended that the beavers be removed on the grounds that they were damaging the natural area. Needless to say, the Conservancy did not implement this suggestion, but chose instead to let the beavers remain as an important part of the natural system. Subsequently Beckley Bog was designated a Natural Landmark.

Although the impact of beavers may be temporarily displeasing in the eyes of some casual visitors, there is little doubt that their presence is re-establishing precolonial influences. For example, the animals are enlarging wetland habitats that have, in general, been shrinking since the disappearance of beavers due to trapping, and they are giving increased protection to the unique bog flora by making it less accessible to human visitation. Beckley Bog has been the subject of one Master's thesis under the Yale Conservation Program and another unpublished study of the impact of beavers on the ecosystem's vegetation

Examples of other New England bogs that have been acquired by the Conservancy are Colchester Bog in Vermont, Black Pond in Massachusetts, Ell Pond in Rhode Island, and Crystal Bog in Maine. Colchester Bog lies in an old channel of the Winooski River at the edge of Lake Champlain just north of Burlington. It started forming about 9,000 years ago with the recession of the Champlain Sea following the retreat of the Wisconsin ice sheet and is dependent upon the adjacent lake for its water supply. The Vermont Chapter purchased a major portion of this wetland in 1973. Since private organizations such as the Conservancy do not enjoy tax-exempt status in Vermont, title was transferred to the University of Vermont, which does. The University will maintain this natural area for educational and scientific purposes. Colchester Bog's proximity to the campus makes this arrangement particularly appropriate.

Black Pond in Norwell, Massachusetts, acquired in 1962 and 1963—primarily through the efforts of Dr. William G. Vinal—is an excellent example of a bog located in a densely-populated region and, hence, requiring close supervision. During the initial 12 years of Conservancy ownership, a number of encroachment problems developed, including plant collecting, trampling of the bog mat, garbage dumping, tree cutting, and camping. In 1976 an active stewardship committee was reestablished, the preserve was temporarily closed for restoration, and uncontrolled access and use has been almost completely eliminated. Because

of its excellent job in restoring the preserve, the Black Pond committee won the Conservancy's Stewardship award in 1977.

A wild and rugged section of southwestern Rhode Island close to the Connecticut border is characterized by great granitic knobs between which lie little lakes and wooded wetlands. The old Narragansett Indian trail threads its way through this country, passing between Ell Pond and Long Pond. An archaeologist, the late Mrs. Eva Butler, was on intimate terms with the local Indians and acquired a 19-acre tract on the northern shore of Ell Pond, which included an extensive coastal white cedar swamp with a thick understory of rhododendron *(Rhododendron maximum)*. The Conservancy purchased the property from Mrs. Butler's son, Sewall, for a bargain $1,500 and subsequently has collaborated with the Rhode Island Audubon Society in a much more ambitious effort to expand the preserve to include a major portion of Long Pond. Among the interesting plants found along the shores of these ponds are yellow-eyed grass *(Xyris)* and meadow-beauty *(Rhexia virginica)*.

One of the most exciting projects in New England is within the 5,500-acre wetland complex in Aroostook County, Maine, at the heart of which lies Crystal Bog. Long noted for its rare plants, including an eastern station for the midwestern prairie white-fringed orchid *(Habenaria leucophaea)*, the bog and adjoining wetlands—a total of 3,800 acres—was donated to the Conservancy in 1976 by the J. M. Huber Corporation. An effort is now being made to raise an endowment to assure the permanent stewardship of this outstanding natural area, which has been designated a Registered Natural Landmark. So far, over $20,000 has been received, the largest gifts coming from the Huber Corporation and the Maine Chapter of the Conservancy.

Freshwater ponds with no human encroachments are extremely rare, especially in southern New England. Fuller Pond, however, is a 60-foot-deep spring-fed body of freshwater. It is situated in the middle of the 772-acre Pond Mountain Natural Area in Kent, Connecticut, which protects the entire watershed. Many years ago the level of Fuller Pond was raised about two feet by a low dam, but the effects of this minor disturbance have since become stabilized. Two small cabins are found near the pond's shores. The Pond Mountain Trust, which was established by the donor of the original area, Miss Myra Hopson, discontinued use of one cabin. The other serves as a research facility where graduate students from the Yale Biology Department have been engaged in limnological investigations (studies of fresh water). Such research would not have been possible in ponds enriched by nutrients of human origin.

The opportunity to preserve Fuller Pond was brought to Miss Hopson's attention by a former Conservancy board member, Dr. Frank E. Egler. The Conservancy helped her by finding an attorney who contributed his legal expertise in establishing a testamentary trust during her lifetime. Later on, after the trust was established, the land was further encumbered with legal restrictions through a temporary transfer of the property to the Conservancy. Additional tracts have been acquired to buffer the preserve, one of which was a gift from the Stanley Works Corporation—the adjoining Saint John's Ledges.

One of the most photogenic vistas in New Hampshire is Mount Chocorua as seen across Chocorua Lake. The shores of this lovely little body of water and much of its watershed have been protected from further environmental damage through a remarkable bundle of conservation covenants held by the Chocorua Lake Conservation Foundation. The northern edge of the Lake, which lies in the center of the view, is completely undeveloped. A significant portion of this sandy shore is part of the Bolles Nature Reserve, a gift to The Nature Conservancy from Mr. Spencer Phoenix. This preserve not only protects interesting aquatic plants in the Lake but also safeguards a rich forested swamp and a small pond lying at the foot of a steep glacial esker or ridge.

One of Connecticut's most recent acquisitions preserves a very special habitat, a calcareous (limestone) wetland. These wetlands are very scarce in southern New England, because they occur only in places underlain by lenses of limestone. A gift of the four Blagden sisters, Beeslick Pond and the adjacent limestone bog provide habitat for a lush and diverse flora, distinct from the vegetation of adjacent acidic sites. Among the rarities found on the property are the dwarf birch *(Betula pumila)* and a nesting station for the short-billed marsh wren.

There are many more ponds and bogs than can be described here. To date the Conservancy has preserved over 100 areas in New England alone that have, as primary features, either ponds or bogs and sometimes both. Connecticut, for example, contains 24 preserves that include ponds and bogs. Each of these bodies of water is different, each a habitat for its own group of plants and animals, each a vital and rich "liquid asset" of Nature's system.

Dr. Richard H. Goodwin is Professor Emeritus of Botany at Connecticut College in New London, Connecticut. He is a member of the Conservancy's Board of Governors and President of the Conservation and Research Foundation.

Great Wass Island, Maine

The Coast:
Changed and Unchanged

By Richard Saltonstall, Jr.

Barely 200 feet high, Morse Mountain nevertheless deserves its mountain title because of the stunning views it affords. When George St. John leads a visitor to the granite summit he can point out the features of as impressive and intricate a beach, dune, salt marsh and tidal creek panorama as exists anywhere on the Atlantic coast. To the south, unending line of waves wash over the gentle slope of Seawall Beach, said to be the last unaltered long barrier spit in Maine—a mile and a quarter of fine-grained sand that, through the millennia, has drifted from the Kennebec River estuary.[1] Tidal creeks, Sprague River on the west and Morse River on the east, shape this 600-acre ecosystem so that it resembles the biting end of a hammerhead shark. St. John points to a large concave dune on the west spit. It is the largest parabolic dune in Maine and it maintains a fairly stable size and shape because it receives invisible deposits of sand carried in the northwest winds from Cape Small, across the mouth of the Sprague. The leeward slopes of this and other dunes are covered by American beachgrass and beach heather. In the backdunes, a young forest of pitch pine is growing. Off to the east, between the opening of the Morse River and the Kennebec estuary, lies Popham Beach State Park.

Though unaltered by man, Seawall Beach is not unchanged by time. For one thing, the leading edge of the Atlantic Ocean has moved inland 50 feet or more during the past three decades. And man has wrought evident changes behind the shore. East-west depressions running parallel to one another through the Sprague's salt marshes are the remains of drainage ditches dug when the marsh was farmed for its rich salt hay. "They also took out barrels and barrels of cranberries," says St. John. On the far side of the marshes, an abnormally straight track of water reveals the most recent ditching done by residents of Small Point to drain mosquito breeding habitat. "Are you familiar with greenhead boxes?" St. John asks. He points to a cluster of these behind the dunes opposite Cape Small. In the distance they look like bales of new-mown hay; instead they contain elaborate mesh traps to divert the horseflies that bedevil the present generation of Small Point sunbathers.

A year ago, the St. Johns and two other branches of the family gave 30 acres to The Nature Conservancy and granted an easement to protect much of the remaining land in the 600-acre property. They are presently completing a plan that will enable the

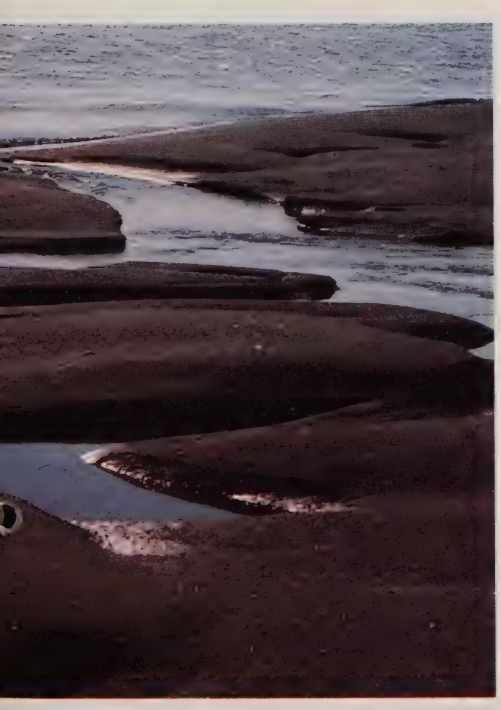
entire ecosystem to be managed for educational and scientific purposes. The Morse Mountain Preserve contains not only the interesting geological and botanical features of the beach and the backdunes; it also has nesting sites for least tern and piping plover and is a habitat for other Atlantic Flyway shore birds. Furthermore, its 150-acre salt marsh is vital as a marine nursery.

Back in 1892, some developers calling themselves the Mountain Farm & Seashore Co. filed a plan with the authorities in Bath to subdivide the land between Sprague and Morse Rivers into quarter-acre lots situated in five separate enclaves. Morse Mountain was to be named for Noah's landing, Mount Ararat, and would be reached by the Tuxedo Bridle Path. A brochure in Victorian purple prose said that 2,000 bathers could "desport themselves without jostling" on Seawall Beach. But the natives didn't let it happen; they overruled approval by the legislature and by the county of a proposal to bridge the Morse River for access by railroad. Had it not been so cut off by the tidal marshes, the Morse Mountain and Seawall Beach habitat would have been converted to cottage frontage like other stretches of seashore in Connecticut and Rhode Island, Massachusetts, New Hampshire, and Maine.

At first cleared and farmed, later ditched and developed, New England's coastal plain has been altered to one extent or another throughout most of its expanse eastward from Long Island Sound. The primeval oak forests described by Captain John Smith are gone. So are the tall pines, "masts for ships of four hundred tons," described in 1605 by James Rosier. Martha's Vineyard is no longer the tangle of vines for which it was named. Only 15,550 acres, less than half of the state's original salt marsh, remain in Connecticut.[2] Through the nineteenth century, coastal settlers farmed, lumbered, and quarried such offshore islands as Damariscove, Big Garden, Round, and Wreck Islands, which are now Nature Conservancy preserves. Yachtsmen cruising in Maine today can quickly spot the wheat color of fresh lumber standing out against the dark green of the spruce woodland where new houses are being built by the seasonal migrants of the seventies. Technology has come up with sewer and water systems that can surmount the environmental limitations of rocky islands.

The New England coastline is undergoing natural change too. Land subsidence at a present rate of two feet a century is moving beach and marsh habitats slowly inland. In Boston Harbor, Nixes Island, a 12-acre grant to John Galop in 1636, has turned into a well-named shoal.[3] And beach and marsh systems change character and shape perceptibly with winter storms and from the unrelenting encroachment by the ocean just over the seasons. Cottages at Popham Beach, several miles east of the Morse Mountain Preserve, surrender to the sea each year now.

Fortunately, most coastal habitats that have been farmed, grazed, ditched, or filled are still important wildlife areas and, like the St. John's property, can be maintained and even rejuvenated as natural areas by energetic and imaginative con-



Left, Griswold Point at the mouth of the Connecticut River; above, spotted sandpiper.

servation stewardship. Along the Atlantic coast, The Nature Conservancy has a great opportunity to demonstrate new techniques of land preservation and habitat restoration, two of its by-law objectives.

Connecticut offers good case studies. Every one of the Conservancy's 15 coastal preserves in this state contains salt marshes that have been farmed, ditched, or bulwarked. The 67-acre Pattagansett Marshes Preserve in East Lyme contains ledges, an island, and salt marshes behind a sand spit used by an association of some 70 families. When the ocean began to cut a channel near the west end of the spit, threatening the interior marshes behind the beach barrier, the association consulted professors at Wesleyan University and had a jetty built of boulders embedded in the seaward beach, with a retaining wall on the marsh side. As a result, the spit didn't become an island and the Pattagansett Marshes weren't invaded by the sea.[4] Connecticut's newest coastal sanctuary is Griswold Point, a 22-acre spit a mile long at the mouth of the Connecticut River in Old Lyme. For many years the narrow beach was filled with wood platforms on which regular summer visitors set up wall tents. Under Conservancy stewardship, the platforms have been removed so that the beach grass can grow back. Last winter's storm-induced high tides deposited a patch of sand up on the Griswold Point dune grass where least terns came to nest, returning to a habitat they had not frequented for 23 years. A dozen young terns successfully fledged.[5]

As the land continues to subside, every salt marsh needs protection on its upland fringe. Where the ocean is not yet a threat, development and other disturbances cause freshwater runoff that upsets the marsh's salinity and fills it with sediment. Dr. William Niering, botanist at Connecticut College, fears that not enough attention is being paid to the need for marsh buffer zones, particularly ever since the enactment of laws to protect salt marshes and their cover of *Spartina* grass (cordgrass). The legislation may have lulled the public into thinking the marshes are now well protected, Niering explains, when they really aren't.[6] Wherever tidal flushing of the marshes is inhibited by gates on inlets and other common control measures, the *Spartina* gives way to *Phragmities,* a tall, reedy, woodier grass that transpires greatly (i.e., releases water absorbed from the marsh into the atmosphere), thereby lowering the marsh water table. Niering feels that salt marshes of inferior quality can become important habitats if the land and its environs are well protected. "Time is the parameter that we need," he says.

The case of Griswold Point's terns is also a reminder that migrating and nesting patterns may change on account of the invasion of other species, such as herring and black-backed gulls, or for reasons that are still a mystery. Habitats where nesting birds were driven away by human activities, such as egg collecting and hunting, can also be restored. Dr. Stephen W. Kress, working with the Audubon Society, has reintroduced the colorful puffin to an island in Maine where it last bred 70 years ago. The Nature Conservancy's Maine Chapter has given priority to the protection of such nesting areas—islands and ledges off-shore that are frequented by osprey, bald eagle, tern, turnstone, whimbrel, guillemot, eider, black duck (which is threatened not only by intensive hunting and habitat encroachment but by hybridization with the mallard), and a variety of other species.

Quite often, The Nature Conservancy is not the logical recipient or steward of a conservation property even though it may be the organization most capable of arranging a project. The Conservancy has worked closely with the Rhode Island Audubon Society to pinpoint and protect important coastal habitats. The Massachusetts Audubon Society recently borrowed $110,000 from the Conservancy in order to purchase land adjoining the Wellfleet Bay Sanctuary. Also in Massachusetts, the Conservancy arranged for the acquisition of 14-acre Lunt Marsh, on Labor-in-Vain Creek at the mouth of the Ipswich River, then transferred the property to the Essex County Greenbelt Association.[7] The Maine Chapter of the Conservancy has passed on some 2,000 acres of coastal habitat to state and federal agencies. The Chapter has retained 38 coastal properties with a total area of 2,096 acres called the Rachel Carson Seacoast.[8] The most recent transfer resulted in the protection of Petit Manan Peninsula, a remote 1,706-acre property that attracts such occasional shorebirds as the Hudsonian godwit. The area also contains a freshwater pond and quaking bog where studies may produce clues concerning the geological evolution of the New England coast and its periods of oceanic rise and fall. Given to the U.S. Fish and Wildlife Service, Petit Manan has been incorporated into the Moosehorn National Wildlife Refuge.

The state governments of New England are themselves becoming more concerned about the preservation of coastal habitat. Both Massachusetts and Rhode Island are in the final process of setting up State Heritage Programs, and Maine has established a Critical Areas Advisory Board for the identification and preservation of important natural areas. Some 90 coastal sites have been placed on Maine's critical areas list, and the Maine Chapter is working closely with the state to see that these areas are given due priority in conservation planning. The Connecticut chapter has its own subcom-

Long Porcupine Island is one of the 38 coastal properties comprising the Conservancy's Rachel Carson Seacoast in Maine.

mittee for science and acquisition, which has developed a list of priorities in the absence of a State Heritage Program.

There are indeed a few small pockets of primeval New England coast—offshore islands where small mammals and different plant species have followed their own evolutionary whims in splendid isolation. Perhaps there are also some remaining beach and marsh systems to compare with the Conservancy's Fogland Marsh Preserve on the Sakonnet River in Rhode Island, or with the northern half of Prudence Island in Narrangansett Bay where the Conservancy recently acquired some 670 acres of salt marsh and upland dunes that have been transferred to the State of Rhode Island. These areas deserve preservation and, if possible, should be given buffer protection as well.

But in addition to identifying and preserving New England's rare hidden pockets of unchanged coastal lands, The Nature Conservancy must move to protect the ecosystems that have been historically changed but not destroyed as habitats. In some cases it may be necessary to help the process of recovery along with imaginative ecological management. Restoration is not only justified for its direct effect on damaged land, but also for its research value in developing and testing more widely applicable rehabilitation techniques. What is more, those areas that are restored will some day be important coastal preserves in a corridor that is under increasing population pressure.

Bruce W. Nelson and L. Kenneth Fink, Jr., *Geological and Botanical Features of Sand Beach Systems in Maine,* Report for Critical Areas Program, March, 1978.

[2] Conversation with Dr. William Niering, botanist at Connecticut College.

[3] Betty Flanders Thomson, *The Changing Face of New England,* Houghton Mifflin Co., 1977, p. 86.

[4] The Nature Conservancy's Connecticut Chapter, *Site Report: Pattagansett Marshes.*

[5] Conversation with Susan Cooley, Director of Stewardship for the Conservancy's Connecticut Chapter.

[6] Conversation with Dr. Willam Niering.

[7] Conservation with Dix Leeson, New England Field Diretcor, The Nature Conservancy, Eastern Regional Office.

[8] Mary Minor C. S. Lannon, "Three Thousand Islands . . . Their Future?" *The Nature Conservancy News,* July/August 1978.

Richard Saltonstall, Jr., is a freelance writer residing in Jefferson, Maine. He was the White House correspondent to *Time* magazine during the Johnson administration, and has written several books including *Maine Pilgrimage.* He is an active member of the Conservancy's Maine Chapter.

Mianus River, Connecticut

The Rivers

By Ogden Tanner

New England, shaped by eons of running water and grinding ice, is a patchwork quilt of rocky fields and deep green forests stitched together by the silvery threads of thousands of rivers, brooks, and streams. The lilting names of many of its watercourses reflect an ancient Indian heritage: Sakonnet, Naugatuck, Winooski, Housatonic, Allagash. The names of others, like the Farmington and Deerfield, speak of the advent of settlers, who pushed back the forest for farms, harnessed the flowing waters for countless sawmills, gristmills and textile mills, and used the rivers as highways of commerce on which to float harvests of timber down to the sea.

Today most of the old mills are gone. The lusty era of the river logger has ended with the takeover of diesel trucks and the last log drives down the Penobscot and Kennebec in Maine. Now conservation-minded New Englanders, like their counterparts elsewhere, are bent on preserving what remains of their wild rivers against further development and returning others to something more closely resembling their original states. Rivers are valued not only as sources of unpolluted drinking water but as natural ecosystems of plants and wildlife that are increasingly enjoyed for themselves—by growing numbers of hikers, birdwatchers, canoeists, and fishermen, and by many others who just like to sit by the sparkling waters and dream away a summer afternoon. Not the least important of the new users are those who come to learn the river's ways: students of botany and biology, and schoolchildren from the city who have never before had a chance to see a raccoon dabbling in the shallows or a trout lily nodding in a streamside glen.

The Nature Conservancy has been very much a part of such river preservation efforts. Its first and oldest active project, in fact, was born on a river—a small but spectacularly lovely one that flows through the southwestern corner of New England on its way to Long Island Sound. Twenty-seven years ago a group of Connecticut residents, concerned over what might happen to a wild ravine on the Mianus River, joined hands with neighbors just over the line in New York's Westchester County, affiliated themselves with the newly-formed Conservancy, and set about raising money to protect the Mianus River Gorge. Since then some 375 acres have been pieced together in a 2½-mile strip on both sides of the stream. More than 10,000 visitors a year come to walk forest trails blooming with trilliums and wild orchids, to pause by an exquisite woodland waterfall, and to marvel at a grove of hemlocks three centuries old.

The example of Mianus Gorge has inspired similar conservation projects all over the nation, including many in nearby Connecticut and in the rest of New England as well. Farther down the same river in Stamford lies the Altschul Preserve. A recent addition of 14 acres, the gift of Helen G. Altschul and John J. McCloy, has swelled the preserve to 165 acres, including another hemlock forest, wetlands, and a high rock dome that provides a breathtaking view over the Mianus watershed. A few miles to the west in Greenwich, an original purchase of 50 acres of land in the Byram River Gorge has grown to 140 acres. The latest gifts are 10 acres of pond and woodland from Calvin Duke and 6 acres from IBM. An ecological twin of the Mianus preserve, the Byram Gorge is still largely untraveled and untouched—a wild enclave of giant hemlocks and tulip trees that supports a diverse population of squirrels, songbirds, great horned owls, opossums, raccoons, and deer. Like many seemingly virgin woodlands in New England, the gorge is all the more interesting for its ghostly traces of human activity, now all but swallowed up by the returning forest's second growth. In the 18th Century the early settlers of Greenwich moved inland up the river

valley, cutting oaks, chestnuts, and maples for timber and bulding dams and water wheels. The sites of three small mills can still be discerned from their tumbled retaining walls. The trails, now tangled with undergrowth, follow old wagon roads that cross side streams on old bridges made of massive stones.

Elsewhere in Connecticut, cooperation to preserve riverfronts has taken different forms. Near the village of Litchfield the Bantam River winds picturesquely through a countryside still largely rural, passing from bright farm meadows and floodplain marshes to rocky, wooded glens and wide, deep pools. Some 15 years ago a handful of property owners along the river began to think about ways to protect this varied beauty against the encroachment all too familiar in other towns. With the guidance of the Conservancy, ten of them entered into a covenant, retaining possession of their lands and the right to use them but agreeing to certain restrictions, including no tree-cutting, no billboards, no removal of soil or gravel, and no additional buildings or roads. Key acreage was donated to the Conservancy as a partner in the project, giving the covenant longevity and added legal strength. Today there are 28 conservation easements granted to the Conservancy along 4½ miles of the Bantam River, agreements that bind future owners as well as present ones and provide permanent preservation without public access. The attitude of the participants is summed up by one of them, Thomas Babbitt: "I enjoy the river, and I hope that future generations will have a chance to do so too." Like his neighbors, Babbitt frankly admits an added benefit of his commitment: "It increases the value of my adjoining land."

Some 8½ miles along the wild Seboeis River were donated to the Conservancy by the J.M. Huber Corporation in 1976.

West of Litchfield near the town of Kent, river conservation is proving good business for corporate donors as well. The Stanley Works of Great Britain, a well-known manufacturer of tools, has given the Conservancy a 12-acre section of woodland that includes the 200-foot cascade of Kent Falls. The property has been turned over to the state to become part of a public park. On the opposite bank of the Housatonic River north of town, Stanley Works has donated an equally scenic area of 132 acres known as St. Johns Ledges, where rocky, 600-foot-high cliffs are cut by tumbling mountain brooks and traversed by a rugged mile-long section of the Appalachian Trail. Hikers frequently see wheeling turkey vultures and broad-winged hawks.

An ever broader spectrum of wildlife, including great blue herons, ospreys, and a variety of shorebirds and fish, abounds in a series of Conservancy acquisitions around the mouth of the Connecticut River near Essex and Old Lyme. This is where New England's largest river meets the sea in a rich ecosystem of estuarine marshes, sandspits, meadows, woodlands, and river bluffs. Among the gifts are the 89-acre Turtle Creek Wildlife Sanctuary, once the estate of former Governor and Mrs. Chester Bowles; 129 acres in Lord's Cove donated by Richard F. and Stanley Cooper, Norman Harrower, and Chamberlain Ferry; 15 acres of the Lieutenant River Marsh, given by Mrs. Gertrude Barney; 29 acres of Great Island Marsh and Griswold Marsh, and 22 acres of Griswold Point, a mile-long barrier beach—all conveyed to the Conservancy by William, John, and Matthew Griswold and members of their families.

A similar estuarine jewel of 50 acres, on the Sakonnet River in Rhode Island, has been given by Dr. Earl Blough of Tiverton and his daughter, Mrs. Curt Muser. One of the few undisturbed tidal marshes remaining in the area, and the Conservancy's first project in the state, the Fogland Marsh is protected as a habitat for many species of shorebirds as well as a fertile nursery ground for shellfish and fish.

In Massachusetts, 480 acres along the Nashua River in the towns of Bolton, Lancaster, and Harvard have been purchased at foreclosure by two public-spirited people, Philip de Normandie and Walter S. Burrage, Jr. Rather than reselling the acreage at a substantial profit to developers, the two men turned it over to the Conservancy at a relatively modest price to help in a long-term effort to clean up the river and create a greenbelt along its banks. The Conservancy held the prop-

Westfield River Wilderness, Massachusetts

erty until the Massachusetts Division of Fisheries and Wildlife had funds available to take it over as a wildlife management area. In the western part of the state, near Cummington, the Conservancy acted in similar fashion to receive 459 acres along the Westfield River from three families—the Perkins, Evans, and Bisbees—then transferred the holding to the Department of Environmental Management as part of Chesterfield State Park.

In Vermont the Conservancy's state chapter teamed with the Winooski Valley Regional Park District to purchase a 158-acre parcel in Burlington so the state could add it to Ethan Allen Park, thus protecting the shoreline of the Winooski River for recreational use. The Conservancy purchased a 100-acre tract lying at the mouth of the LaPlatte River and covering more than a mile of shorefront on Lake Champlain, and held it until local, state, and federal funds made it possible to transfer ownership to the town.

In Maine, the J. M. Huber Corporation made a major donation to the Conservancy—some 8½ miles along the wild Seboeis River east of Baxter State Park. The property includes woodlands populated by moose, deer, and bear; a fine salmon and trout stream; and a dramatic 3-mile gorge where a torrent of white water has proved too much even for the most skilled canoeists. The Huber Corporation, engaged in timber cutting and forest management in the area, felt the river was too beautiful to touch and adjusted its policies accordingly. The corporation's gift assured permanent protection of the area. Elsewhere in the state, Mrs. Lewis Marshall donated 181 acres on the Kennebunk River to the Maine Chapter for management as a nature preserve and study area for local schools. Directly across from Mrs. Marshall's holding, Robert and Jane Butler gave another 6 acres of riverfront on the Kennebunk, including a popular local spot known as Picnic Rock. In the Kennebec River near Embden, Clinton B. Townsend has bequeathed two scenic islands, called Indian and Fowl Meadow Islands, to serve as a 32-acre preserve.

One of the Conservancy's most dramatic single achievements in New England to date has been the acquisition of 469 acres of priceless mountain terrain lying in the shadow of the Presidential Range at the "Gateway to the White Mountains," Crawford Notch. Adjoining both the White Mountain National Forest and Crawford Notch State Park, the area includes two mountain lakes located less than a half mile apart that form the headwaters of the Saco and Ammonoosuc Rivers. In addition, the land supports one of the few large virgin stands of red spruce remaining in the northeast. The tract also encompasses the century-old Crawford House hotel and its environs—a region ripe for commercial development—as well as the Crawford Path leading to the summit of Mount Washington, thought to be the oldest continuously used hiking trail in the U.S. To bring about this key purchase, the Conservancy joined forces with the Appalachian Mountain Club and the Society for the Protection of the New Hampshire Forests, forming a group called the Crawford Notch Coalition. After two years, negotiations with private owners were completed and total costs fixed at $215,000. The Conservancy purchased the property for that amount and sold it to the U.S. Forest Service for $175,000, the limit the Forest Service could pay, leaving the Coalition to raise the remaining $40,000 in contributions from the public at large. As a result of that campaign, the sources of two of New England's most treasured rivers, which drain into the Atlantic Ocean some 250 miles and five states apart, will remain forever wild.

Ogden Tanner, a free-lance writer and editor, lives in New Canaan, Connecticut. He is the author of various books and articles on natural history and conservation including two volumes in the Time-Life Wilderness series, *New England Wilds* and *Urban Wilds.*

The Forests

Burt Forests, Vermont

Three hundred and fifty years ago, New England was covered almost entirely by dense forest. But ever since 1620 when the colonists began clearing the woodlands for farming and industry, New England forests have been exploited, and very little of the original forest remains. Remarkably, there are still some areas today where human impact has been slight or where the forest has regained much of its original character.

The Nature Conservancy has protected a variety of New England woodlands, ranging from the white spruce forests of the Maine coast to the white pine-hemlock-nothern hardwoods forest of the upland areas. The preserves vary from 15 acres to 10,000 acres, from sea level to over 3,000 feet, from the suburbs to the wilds. These areas could not have been saved without the help of many partners in conservation. Conservancy volunteers and staff in New England have worked with public agencies such as the U.S. Forest Service and the Maine Critical Areas Program, foresighted landowners like Henry Harris and H. L. Achilles, corporations like the J. M. Huber Corporation, and sister conservation groups such as the Vermont Natural Resources Council, and the Society for the Protection of New Hampshire Forests.

As demands on New England's forest resources intensify, the need increases to preserve the best examples of the full range of the region's woodland diversity. The Conservancy's next protection targets in New England must be chosen from a long lists of habitats needing preservation. Natural systems now imperiled include maritime plant communities in all the coastal states, floodplain forests in New Hampshire, and high and low altitude hardwood stands in Vermont.

To make critical preservation choices, the Conservancy and its collaborators will rely heavily on new natural heritage programs in Rhode Island and Massachusetts, and on existing inventories and studies in other states. There is not much time left to save the most endangered areas. We want to make sure the beauties and riches of the New England forest will be as much a part of our descendents' lives as they were our forebears'.

The projects highlighted below reflect the variety of the New England forest:

- A spectacular grove of hundred-year-old pines is the highlight of the **Hermitage,** a 35-acre preserve on the Appalachian Trail in Piscataquis County, Maine. There are also hemlocks and northern hardwoods on the sanctuary, which is a National Natural Landmark.
- **Turtle Island** in Frenchman's Bay, Maine, contains a stand of virgin red spruce over 150 years old. When the Conservancy purchased the 136-acre island, pulping operations had already begun. Island residents include osprey, eider, and gray and harbor seals.
- The **Cathedral Pines,** 40 acres in Litchfield County, Connecticut, are well-named. Two hundred year old pines tower 150 feet overhead, some with 4-foot diameters. The Appalachian Trail crosses the preserve, which also contains many exceptionally large eastern hemlocks.
- **Minot Woods Preserve** in Plymouth County, Massachusetts, protects a fine example of typical Cape Cod vegetation—pitch pine-scrub oak forest. The 47-acre tract was transferred to the Plymouth County Wildlands Trust.
- **Halfway Pond Island** lies in the middle of a freshwater pond in Plymouth County, Massachusetts. On the 15-acre island is an old-growth forest remnant of northern hardwoods and conifers isolated in an area of predominantly pitch pine-white pine-scrub oak forest. The island also shelters four

species of holly, some exceptionally large. The preserve was acquired with the assistance of the Massachusetts Federation of Garden Clubs.

• **Stamp Act Island** in Lake Wentworth, New Hampshire, is covered by old-growth white pine-hemlock-northern hardwood forest, and is an important nesting site for loons and great blue herons. The island was once owned by Governor Wentworth, and pines on Stamp Act were used for masts on pre-Revolutionary British vessels. The Conservancy purchased the island in cooperation with the Lake Wentworth Association.

• The largest project ever undertaken by the Conservancy in New England is **Burt Forests,** over 15 square miles of lush forest in the Green Mountains of Vermont. Of particular interest are the virgin spruce-fir forests on the upper slopes and the alpine flora of the windswept summits of the higher peaks. The land will be transferred to the State of Vermont as additions to three state forests.

Top: White pine grove, The Hermitage, Maine; above left, flying squirrel; above, Burt Forests, Vermont.

Here is a list of my friends who would appreciate hearing of your efforts.

Name _____ (please print)
Address _____
City _____ State _____ Zip _____

Name _____ (please print)
Address _____
City _____ State _____ Zip _____

Name _____ (please print)
Address _____
City _____ State _____ Zip _____

Name _____ (please print)
Address _____
City _____ State _____ Zip _____

Enclosed is my contribution of $ _____ to the General Fund of The Nature Conservancy.

Name _____

Address _____

City _____ State _____ Zip _____

Contributions are tax-deductible. Please make checks payable to The Nature Conservancy. Your cancelled check is your receipt.

What we have saved and what we will save in the next few years will be all that will remain to be passed on to future generations.
There will never be another chance.

Your stamp on this envelope is an additional contribution to the Conservancy.

FIRST CLASS
Permit No. 1585
Arlington, Va.

BUSINESS REPLY MAIL

No Postage Stamp Necessary if Mailed in the United States

Postage will be paid by

The Nature Conservancy

1800 NORTH KENT STREET
ARLINGTON, VIRGINIA 22209

Alabama

DESOTO FALLS (Dekalb County). The Conservancy assisted the Alabama Department of Conservation and Natural Resources in acquiring 77 acres to add to the Desoto Falls State Park. Located along the southeast section of the Little River, the property is composed of mixed hardwoods and pines with a dense underbrush of rhododendron and mountain laurel. The area, which features a rushing waterfall, had been marked for subdivision into ½- and 1-acre lots.

Connecticut

CANFIELD ISLAND MARSH (Town of Westport). A 1-acre tract, the property is part of a large salt marsh that provides feeding grounds for herons from nearby Norwalk Island rookeries. The marshland was given to the Conservancy by Mr. Richard S. Weinstein and is managed by the Connecticut Chapter.

Georgia

OSSABAW ISLAND (Chatham County). The northernmost of Georgia's Golden Isles, Ossabaw contains 25,000 acres, over half of which is rich, productive marshland. Upland portions of the island are covered with a dense forest of live oak, mature pine, and palmetto laced with meandering tidal rivers and creeks. Ossabaw harbors three endangered birds—bald eagle, brown pelican, and peregrine falcon—as well as wild turkey, white-tailed deer, and wild razorback boar. Valued at $15 million, the island was purchased for $8 million, $4 million of which was donated by Atlanta philanthropist Robert W. Woodruff. After the purchase was completed, Ossabaw Island was transferred to the State of Georgia for inclusion in its Heritage Trust Program.

Illinois

REED-TURNER WOODS — Addition — (Lake County). The 18-acre tract is the second portion of a 32-acre area donated to the Conservancy by Mr. and Mrs. Harold Turner. Approximately 25 acres of the property are second-growth mixed hardwood forest and the remaining 7 acres consist of frontage on Reed Lake, which still appears free of pollution. Management of the entire 32 acres is the responsibility of the Illinois Chapter.

SHAW WOODLANDS AND PRAIRIE—Addition—(Lake County). A gift of General Charles C. and Mary C. Haffner, Jr., the 5-acre tract is largely second-growth woodland. The area provides habitat for local wildlife and nesting cover for several bird species. Its primary importance is as buffer for the adjacent woodlands and prairie

of the original Lake Forest Preserve, the finest example of the prairie ecosystem remaining in northeast Illinois. The sanctuary now contains 39.5 acres and is managed by the Lake Forest Open Lands Association and the Illinois Chapter.

Maryland

SUGARLOAF MOUNTAIN — Additions — (Montgomery County). A conservation easement on 1,126 acres at the base of Sugarloaf Mountain was given by Mr. Janet S. Farr and Mr. W. Sharon Farr. The area provides excellent buffer for preserving the natural qualities of the adjacent Sugarloaf Mountain Preserve, a National Natural Landmark. The easement has been transferred to the Maryland Environmental Trust. A second addition in Frederick County was purchased for inclusion in the Monocacy Natural Resource Management Area, which is bordered by Sugarloaf Mountain. Rising 160 feet above the Monacacy River, the 225-acre property affords beautiful, scenic views. The land is now administered by the State of Maryland's Department of Natural Resources.

Massachusetts

HALFWAY POND ISLAND (Plymouth County). Lying in the middle of Halfway Pond, a 230-acre freshwater lake, the 15-acre island supports a diverse forest with trees up to 175 years old. Consisting of beech, red maple, eastern hemlock, yellow birch, and white pine, the island's forest contrasts sharply with the common pitch pine and scrub oak forest that dominates the land surrounding the pond. Four species of holly, including one tree that may be the state's champion female American holly, grow on the island. Halfway Pond Island is managed by a local Conservancy committee.

Michigan

FLINT TOWNSHIP PARK (Genesee County). The General Motors Corporation donated this 40-acre parcel of undeveloped land to the Conservancy. The property will be transferred to Flint Township for establishment as a park and recreation area.

HOLLOWAY RESERVOIR—Addition—(Genesee and Lapeer Counties). Another area totaling 83 acres was purchased by the Conservancy for inclusion in Holloway Reservoir, which now contains 1,329 acres. The forested property contains a blend of northern and southern tree species and a variety of herbaceous plants.

JONATHAN WOODS PRESERVE (Lapeer County). A gift of Mrs. Elizabeth B. Graham, the 144-acre property is situated on a glacial moraine and features an unusually varied terrain that consists of many valleys, ravines, potholes, and hills. The diversity of the area is reflected in its multitude of different habitats, including oak-woods, mixed hardwoods, beech-maple forest, tamarack bog, yellow birch swamp, open hillside meadows, swamp forest, aspen stands, a leather-leaf bog, a pure hemlock stand, and a number of small ponds. Approximately 250 species of plants have been identified, including 7 species of *Desmodium,* an herb belonging to the bean family known more commonly as stick-tights or tick trefoils. Management of the area will be the responsibility of the Conservancy's Michigan Preserve Steward, with assistance from Oakland University and Seven Ponds Nature Center.

Minnesota

MORGAN WOODS (Washington County). A rugged, rolling deciduous woodland, Morgan Woods is an excellent example of the area's terminal moraine system, the results of glaciation that occurred about 20,500 years ago. The preserve is an oak-aspen-black cherry forest with scattered openings containing characteristic prairie plants including lead plant and little and big bluestem grasses. Comprising 20 acres and given to the Conservancy by Mr. Samuel H. Morgan and Mrs. Natalie P. Morgan, the property has been transferred to the Science Museum of Minnesota.

SEVEN SISTERS PRAIRIE (Douglas & Ottertail Counties). Best described as dry prairie more typical of the Dakotas, the tract is unique because it supports many plant species that are uncommon in west-central Minnesota. The list of species already identified shows a dozen plants categorized as infrequent in the state. Hairy, blue, and side oats grama dominate the greater portion of the land. The drier and steeper slopes support a nearly pure stand of needle and thread grass, while the eastern edge of the prairie and several ravines contain open bur oak savanna. The property is a hilly ridge rising nearly 200 feet above Lake Christina. Management of the 185-acre prairie will be the responsibility of the Minnesota Chapter, which is also fundraising to complete the purchase.

Mississippi

CLARK CREEK NATURAL AREA—Addition —(Wilkinson County). Like the first portion of Clark Creek—a 427-acre area donated by the International Paper Company—this 166-acre addition is beech-magnolia forest characterized by

Peregrine falcon

steep ravines and clear, fast-flowing streams. The land contains several waterfalls, ranging in height from 20 to 50 feet. A bottomland hardwood forest, Clark Creek has been listed by the Mississippi Natural Heritage Program because of the presence of a rare plant, the Alleghany spurge, and a peripheral land snail. A popular site for college biology field trips, Clark Creek will be managed by the Mississippi Game and Fish Commission.

Missouri

BUFORD MOUNTAIN PRESERVE—Addition—(Washington County). This 80-acre addition brings the total preserve to 2,227 acres. The most extensive plant community in the area is the oak-hickory deciduous forest. Like the rest of the preserve, the new tract contains rocky barrens (exposures of bedrock) that are visually appealing and biologically significant due the scrub oak-ericaceous shrub community which the barrens support. The addition is being acquired by the Missouri Chapter and will be managed in cooperation with the Missouri Department of Conservation.

New York

CLAY MARSH—Additions—(Onondaga County). On behalf of the Town of Clay, the Conservancy purchased two tracts totaling 131 acres in Clay Marsh, the last major cattail marsh remaining in Onondaga County. Varied speices of ferns, orchids, and lilies grow in the area. The entire marsh covers about 1,500 acres, major portions of which are being preserved by the State of New York, while the Town of Clay, with Conservancy assistance, is acquiring 180 acres for a town park. With the purchase of these two areas, 333 acres have been set aside by the Conservancy for the town and the state.

MIANUS RIVER GORGE PRESERVE—Additions—(Westchester County). Two 1½-acre tracts have been added to the preserve, bringing the total to 364 acres. One area, consisting of second-growth woodland, was donated to the Conservancy by Mrs. Dorothy T. Hubbell. The other parcel fronts on the river and was purchased by the Mianus River Gorge Committee to consolidate Conservancy ownership along the river. The preserve is the Conservancy's oldest active project and is managed by the Mianus River Gorge Committee.

WERTHEIM NATIONAL WILDLIFE REFUGE (Suffolk County). Containing 185 acres, the property was acquired in a cooperative effort with the U.S. Fish and Wildlife Service for inclusion in the adjacent Wertheim National Wildlife Refuge. The tract consists of salt marsh and deciduous woodland. The refuge itself has the highest concentration of waterfowl on Long Island. Species seen in the area include bald eagle, great blue heron, osprey, rough-legged hawk, marsh hawk, short-eared owl, long-billed marsh wren, as well as terns and skimmers, and about 20 varieties of warblers. The hermit thrush, usually associated with coniferous forests further north, breeds in the deciduous forest of the tract.

North Dakota

F. A. BEAN FOUNDATION PRESERVE (Divide County). Lying within the Coteau du Missouri, which is a rolling glacial moraine with prairie hills, brush swales, and wetlands, the 160-acre area is a gift of the F. A. Bean Foundation. The property will be managed by the North Dakota State Park and Recreation Division.

Ohio

ABNER HOLLOW PRESERVE—Addition—(Adams County). The 53-acre addition is dominated by a mixed mesophytic forest that is 40 to 80 years old. A small intermittent stream crosses the property's rugged terrain. Uncommon species found in the area include walking fern, four-toed salamander, and green salamander. The preserve, now totaling 460 acres, is managed by the Cincinnati Museum of Natural History.

FUNK WOODS (Seneca County). An area of approximately 20 acres, Funk Woods is a beech-

maple ecosystem that grades to swamp forest. Because of agricultural development, this ecosystem is rare in the region. A gift of Mr. Wayne D. Funk, the property will be transferred to Heidelberg College for management and establishment as a research and environmental education preserve.

Oklahoma

CHARLEY OWL CAVE (Adair County). The 90-acre property purchased by the Conservancy contains a cave that provides habitat for the federally endangered gray bat *(Myotis grisescens).* Known as Charley Owl Cave, the cavern is a nursery for the gray bat and home to the western big-eared bat. Populations of gray bats in the cave number between 40 to 60 thousand. The cavern's ecology is delicately balanced: the bat guano (droppings) forms the basis for a food chain that supports other species' populations in the cave, including two kinds of salamanders. A $15,000 fund-raising drive to finance the purchase has been launched by the Oklahoma Garden Clubs, the state federation of the National Council of State Garden Clubs.

Oregon

HART MOUNTAIN ANTELOPE REFUGE (Lake County). A 20-acre inholding in the Hart Mountain Refuge was purchased on behalf of the U.S. Fish and Wildlife Service for inclusion in the sanctuary. The 275,000-acre refuge was established in 1936 to provide spring, summer, and fall range for remnant antelope herds. Hart Mountain contains numerous well-watered springs and two year-round creeks, thereby serving as an "oasis" in the eastern Oregon desert.

Utah

ESTHER CAMPBELL PROPERTY (Daggett County). The Green River, which is under consideration for classification as a Wild and Scenic River, flows through the property. Trout abound in the river; deer and elk migrate through the area in winter months. The Conservancy is assisting the Bureau of Land Management in acquiring the tract. Management of the 35-acre parcel will be the responsibility of the Vernal District of the Bureau of Land Management.

Vermont

PITTSFORD ICE CAVE (Rutland County). Located on a steep hillside, the 49-acre property consists of mountain meadow, woodland, and a deep gorge. The ice cave is hidden in the gorge, though higher up on adjacent land that has been preserved by the Pittsford Historical Society. The gorge and surrounding property support vegetation that is rare in the area, including many lichens and mosses usually found in more alpine regions. After fund raising has been completed, the land will be transferred to the Pittsford Historical Society for inclusion in the Pittsford Ice Cave Preserve.

West Virginia

WOODLANDS AND WHITE WATER INSTITUTE (Pendleton County). The 392-acre property lies just below the highest summit in West Virginia and features the highest pastures in the eastern U.S., three caves, and two streams. Stately spruce forests and rolling meadows overlook 2 million acres of mountain lands—the Monongahela and George Washington National Forests. For the past 5 years, the area has been leased by the Woodlands and Whitewater Institute, a private non-profit educational institution. The site was purchased with funds from the Conservancy's Claude Worthington Benedum Land Preservation Fund, which is being repaid through fund raising. The area will be transferred to the Woodlands and Whitewater Institute for use in its education programs.

Wisconsin

BEAN LAKE SCIENTIFIC AREA—Addition—(Jefferson County). Occupying 88 acres of a preglacial valley, the property is a gift of Mr. Thomas A. Dean and Mrs. Lois Dean. Animals common to the region include red fox, ring-necked pheasant, long-eared owl, great horned owl, and red-tailed hawk. The area has been transferred to the Wisconsin Department of Natural Resources to serve as a vital buffer to the Bean Lake Scientific Area.

PIKE RIVER PRESERVE, Wild Rivers System (Marinette County). The 37-acre area contains 2,450 feet of frontage on the Pike River, designated by the State of Wisconsin as a Scenic Riverway. By donating $4,000 toward the $50,000 purchase price, the Conservancy's Wisconsin Chapter is assisting the Department of Natural Resources in acquiring the property.

CORRECTION

In the listing of 1977 projects in the May/June issue of the *News,* it was incorrectly stated that the Desert Tortoise Preserve in California would be transferred to the Bureau of Land Management. The 160-acre tract is to be held and managed by the Conservancy.

MAKE A WILL—LEAVE A LEGACY

Will you automatically inherit your spouse's share of your joint estate? That would be simple and nice, but it doesn't necessarily happen that way. Only through a will containing specific instructions can anyone insure that cherished personal effects won't end up in the window of a second-hand store. Without a carefully drawn will, your estate could be distributed contrary to your wishes, according to the laws of your state of residence—even to the extent of determining the guardians of children.

Every man and every woman—not just the elderly, not just the wealthy, not just the breadwinner—should execute a will with the help of an attorney, which reflects his or her current wishes in detail. If you protest that your estate is too small to bother with preparing a will, take warning from the American Bankers Association: " . . . no estate is too small to plan and 'package up' for the future." Everything you own of value—house, cars, life insurance, current value of securities, checking and savings accounts, jewelry, and even the value of your retirement fund—will add up to the total on which the Internal Revenue Service will place a value for taxing purposes.

Consider carefully with an attorney how to utilize federal tax laws to substantially minimize estate taxes. For example, a bequest to The Nature Conservancy will be deducted from your estate *before* taxes. In most cases, this not only lowers your taxes substantially, but also provides you with the pleasure of knowing that you have made a lasting contribution to the protection of priceless natural land.

Bequests to the Conservancy are administered precisely as you direct. Proceeds not specifically designated are placed in the Conservancy's Land Preservation Fund, a revolving fund used to acquire and protect ecologically significant land.

The Nature Conservancy hopes that, in reviewing your plans for yourself and your family, you will remember us—and our important goals. If you would like further information on the subject of wills and bequests, we will be happy to furnish more material or to discuss these matters with you on a totally confidential basis. If you wish, the following clause can simply be incorporated into your will to insure a gift to The Nature Conservancy:

"I hereby give, devise, and bequeath to The Nature Conservancy, a nonprofit, educational, scientific, and charitable institution, incorporated in the District of Columbia, and now of 1800 N. Kent Street, Arlington, Virginia, the sum of _____ dollars, to be used for the Conservancy's general purposes and objectives."

COTTAGES AVAILABLE YEAR-ROUND AT MILE HI

Modern housekeeping cottages overlooking a mountain creek are available for rental year-round at the Conservancy's Mile Hi Ranch. Located 90 miles southeast of Tucson in the Huachuca Mountains, Mile Hi stretches across the mouth of Ramsey Canyon, one of the most lovely and biologically diverse desert canyons in southern Arizona.

Ramsey Canyon and Mile Hi Ranch are especially famous for their birds. Fifteen different species of hummingbird can be seen in the canyon, and Mile Hi is known as the "Hummingbird Capital of the U.S.A." Many other rare and peripheral birds can also be seen within the preserve.

To arrange a visit or obtain a birdlist and other details, write: Mile Hi, Box 84E, Hereford, Arizona 85615.

BOARD MEMBER ACCEPTS C.E.Q. APPOINTMENT

Jane Yarn, member and former vice chairman of the Conservancy's Board of Governors, is leaving the Board to accept an appointment to President Carter's Council on Environmental Quality.

Mrs. Yarn was elected to the Conservancy's Board in 1969. She served as vice chairman from 1972 to 1974, and she has been a member since. Over the years, Mrs. Yarn has supported environmental activities at local, state, and national levels. She has been active in land conservation and has worked in the areas of parks, wildlife, coastal zone management, wilderness and scenic river preservation.

The Council on Environmental Quality was established in 1970 to assist and advise the President on matters of environmental policy and legislation.

PHOTO CREDITS: Whitney Beals, pp. 12, 13 right, 16, 19, 23, 24; Louis Borie, pp. 8, 9 top and lower left, 11; Susan Bournique, pp. 16-17, 20; R. L. Coffin, p. 27; Betsy Jewett, p. 9 lower right; Tim Loomis, p. 25; John Perkins, p. 17; Mr. & Mrs. Daniel Smiley, p. 13 left.

Conservancy Chapters and Committees

The following is a list of all Conservancy chapters and committees as well as their current mailing addresses and chairmen. The News will publish an update of this list twice a year.

Arizona Committee
P.O. Box 40326
University Post Office
Tucson, AZ 85717
Virgil Rule, Chairman

Northern California Chapter
425 Bush Street
San Francisco, CA 94108
John G. Sherwood, Chairman

Monterey Bay Chapter
Box 48
Big Sur, CA 93920
William H. Pentony, Chairman

Southern California Chapter
P.O. Box 921
South Pasadena, CA 91030
Barbara Hopper, Chairman

Tejon Sub-Chapter
914-C Quincy Street
Bakersfield, CA 93305
Zoe Jones, Chairman

Colorado Chapter
P.O. Box 1440
250 Arapahoe Avenue
Boulder, CO 80302
David Harrison, Chairman

Connecticut Chapter
Science Tower, Box MMM
Wesleyan Station
Middletown, CT 06457
Peter Cooper, Chairman

Glastonbury Sub-Chapter
Fairview Terrace
South Glastonbury, CT 06073
J. G. Tschinkel, Chairman

Florida Chapter
10395 S.W. 132 Street
Miami, FL 33176
Pat Harden, Chairman

Idaho Chapter
2015 Sunrise Rim Road
Boise, ID 83705
Liven Peterson, Chairman

Illinois Chapter
666 North Lake Shore Drive
Suite 1919
Chicago, IL 60611
George Covington, Chairman

Indiana Chapter
Route 1, Box 155
Nashville, IN 47488
Marion T. Jackson, Chairman

Iowa Chapter
1626 Campus
Cedar Falls, IA 50616
Lawrence Eilers, Chairman

Kentucky Chapter
71 Dudley Road
Edgewood, KY 41017
William Bryant, Chairman

Maine Chapter
51 Chapel Street
Augusta, ME 04330
Clinton Townsend, Chairman

Maryland Chapter
P.O. Box 154
Royal Oak, MD 21662
Peter Black, Chairman

Minnesota Chapter
328 East Hennepin Ave.
Minneapolis, MN 55414
Wallace Dayton, Chairman

Missouri Chapter
19 Upper Ladue Rd.
St. Louis, Mo. 63124
A. Timon Primm III, Chairman

New Mexico Committee
P.O. Box 338
Roswell, NM 88201
Robert Anderson, Chairman

Central New York Chapter
Friendsville Stage
Binghamton, NY 13903
Harriet Marsi, Chairman

Eastern New York Chapter
196 Morton Avenue
Albany, N.Y. 12202
Louis Ismay, Chairman

Long Island Chapter
P.O. Box 72
Cold Spring Harbor, NY 11724
Jane Page, Chairman

South Fork-Shelter Island Chapter
P.O. Box JJJJ
East Hampton, NY 11937
Harry Willard, Chairman

Lower Hudson Chapter
R.F.D. #2
Chestnut Ridge Road
Mt. Kisco, NY 10549
Harold Janeway, Chairman

Western New York Chapter
186 Burrough Drive
Snyder, NY 14226
Gilbert Yager, Chairman

Adirondack Conservancy Committee
P.O. Box 188
Elizabethtown, NY 12932
Art Savage and Wayne Byrne, Co-Chairmen

North Carolina Nature Conservancy
P.O. Box 805
Chapel Hill, NC 27514
Gordon Hanes, Chairman

Ohio Chapter
1504 West 1st Avenue
Columbus, OH 43212
Ora Anderson, Chairman

Oregon Chapter
4699 Leasure Drive
Mt. Hood, OR 97041
John Mills, Chairman

Northeastern Pennsylvania Chapter
GTE Sylvania
Towanda, PA 18848
James Smith, Chairman

South Dakota Chapter
Dept. of Biology
University of South Dakota
Vermillion, SD 57609
James Schmulbach, Chairman

Tennessee Chapter
720 West End Avenue
Suite 600
Nashville, TN 37203
Garnet Chapin, Chairman

Texas Chapter
P.O. Box 1346
Kerrville, TX 78028
John E. Galley, Chairman

Vermont Chapter
Jericho, VT 04565
Hubert Vogelmann, Chairman

Virginia Chapter
2630 S. Lynn Street
Arlington, VA 22202
Keith Argow, Chairman

Western Washington Chapter
402 Grosvenor House
500 Wall Street
Seattle, WA 98121
T. William Booth, Chairman

Inland Empire Chapter
823 East 5th Street
Moscow, ID 83843
Bob Jonas, Chairman

West Virginia Chapter
1100 Quarrier Street, Room 215
Charleston, WV 25301
Eleanor Bush, Chairman

Wisconsin Chapter
Div. of Tourism, Room 117
123 W. Washington Ave.
Madison, WI 53702
Eugene Roark, Chairman

NEW LIFE MEMBERS

An individual becomes a Life Member of The Nature Conservancy upon contribution of $1,000 for membership dues.

Alabama
Mr. George K. Kiesel

California
Mr. David T. Beauchamp
Dr. Evelyn Hart Case
Dr. H. F. Corbus
Mrs. Nancy B. Crosby
Mr. & Mrs. Ivor J. Davies
Ms. Lucy Heyneman
Ms. Joan R. Keller
Ms. Elizabeth L. Knerr
Mrs. Jean H. Kukulan
Mr. Manfred Lindner
Ms. Sally E. McNagny
Mr. Alan C. Morgan
Mr. Sydney F. Thomas
Mrs. Beulah Parker Vaughan

Connecticut
Mrs. Emery E. Allain
Ms. Dorothy M. Barrett
Mr. Theodore R. Burghart
Mrs. Lois Darling
Mr. Ostrom Enders
Mrs. Garretta E. Howard
Mrs. Frederick G. Jansson
Ms. Helen P. Langer
Mr. Bowen H. McCoy
Mr. Peter W. North
Miss Barbara Rossmassler
Mr. David O. Shoemaker
Mr. Chauncey P. Williams, Jr.

District of Columbia
Ms. Helen-Marie Fruth
Mr. Charles W. McNagny
Mr. Gary K. Olsen
Mr. John Howard Perkins
Mrs. Nancy E. Symington
Miss Claudia P. Wilds

Delaware
Mr. Crawford H. Greenewalt
Mr. C. Porter Schutt
Mrs. Phyllis DuPont Schutt
Mr. John Sherman

Florida
Mr. Roy E. Bazire
Ms. Marvyne Betsch
Mr. Henry C. Bieg
Mr. A. F. Christiansen
Mrs. Reginald J. Davies
Mrs. Lon W. Munsey
Mrs. Nathalie P. Swetland
Ms. Melissa Weinstein

Idaho
Miss Sylvia Cline
Mrs. Clyde M. Martin

Illinois
Mr. James R. Anderson, Jr.
Mr. & Mrs. Albert B. Dick III
Ms. Louise H. Endres
Mr. Albert L. Gundelach
Ms. Muriel E. Guy
Mr. Emanuel Ledecky-Janacek
Mr. Walter C. McCrone
Ms. Joyce A. McNagny
Mr. Herbert C. Morse
Mrs. Beatrice W. Swartchild
Mrs. L. F. Yntema

Indiana
Mrs. R. H. Furman
Mr. Donald B. Grissom
Mrs. Irene S. Herlocker
Mrs. Nancy S. Kuhn
Dr. Hilda E. Pang
Ms. Elizabeth H. Youngman

Iowa
Mr. Andrew K. Stone

Maine
Mr. William C. Black
Dr. Olin Sewall Pettingill, Jr.
Mr. Richard Saltonstall, Jr.

Maryland
Mr. Edward C. Brewster
Maj. Gen., USAF (ret.) Daniel S. Campbell
Mrs. Ruth T. Campbell
Ms. Dorothy B. Elliot
Mrs. Virginia Lemon
Mr. Robert L. Morris
Mr. Harry M. Ohlendorf
Ms. Barbara L. Peterson
Mrs. Emily B. Shane
Ms. Josephine Walker
Mr. James R. Wolf

Massachusetts
Mrs. Cornelia Barnard
Mr. Michael A. Beck
Mrs. Howard S. Hart
Ms. Eleanor L. Lyman
Mr. J. Mason Morfit
Mr. Henry Woolsey
Ms. Mary L. S. Woolsey

Michigan
Mrs. Lamb Stranahan
Ms. Brigitte L. Thompson
Mr. Edward G. Voss

Missouri
Mr. Carl Ted Stude

Minnesota
Mrs. Marion Andrus
Miss Winnifred M. Connole
Mr. George H. Dixon
Mrs. Eleanor Salisbury Fenton
Ms. June Lees
Mr. Wilton E. McKown
Mr. John S. Pillsbury, Jr.
Mr. George S. Pillsbury
Mr. Ira K. Takle
Dr. Lowell W. Weber

New Jersey
Mr. Grace E. Godley
Mrs. Mary Elizabeth Kemmerer

New York
Mr. Richard T. Applebaugh
Mr. George A. Bender
Mr. W. A. Clark
Miss Dorothy Day
Mr. Francis C. Farwell III
Mrs. Susan S. Hammond
Miss Katherine E. Hobbie
Mrs. Patricia H. Keesee
Mr. John Watson Little II
Mrs. Dorothy W. McIlroy
Mrs. Ward Melville
Ms. E. Gloria Meng
Mrs. Elisabeth Post Morrow
Mr. Martin G. Orlins
Miss Beatrice E. Thompson

North Carolina
Mr. Arthur E. Browne
Mr. James S. Dockery, Jr.
Mr. Kenneth J. Durant
Mrs. Margery R. Plymire
Mr. Dudley C. Smith

Ohio
Mr. Raymond Q. Armington
Mr. Stephen L. Black
Ms. Josephine Cannon
Mrs. Charles H. Hewitt
Mr. John M. McCabe

Oregon
Mr. Robert O. Couch
Mr. John A. Courtney
Mr. John W. S. Platt

Pennsylvania
Mr. E. Earnshaw Hastings
Miss Sarah E. Murdock
Mr. Daniel C. Shively

South Carolina
Mrs. Bette C. Hester, Jr.

South Dakota
Mr. Kenneth H. Husmann

Tennessee
Mr. Martin S. Brown
Mr. Garnet Chapin
Ms. Rima Nickell Farmer
Mr. David G. Patterson
Mr. Dudley Porter, Jr.
Mrs. David K. Wilson

Texas
Mrs. Bernice West Beyers
Mrs. Ford W. Boulware
Mrs. Juanita Edmison

Virginia
Mr. Eliot Breneiser
Ms. Juanita S. Carpenter
Mr. Hewitt Crosby, Jr.
Mr. David Herzog
Mr. Allen H. Kitchens
Mrs. Valerie B. Kitchens
Mrs. Frances Johnson Lee
Ms. Anne Rowland
Ms. Marvelle B. Toney
Mrs. Mary Frase Williams

Washington
Mr. John L. Ainsworth
Mrs. R. H. Clise
Mr. Richard F. Knox
Ms. Ellen B. Kritzman
Dr. Russell Kurtz
Mr. C. R. B. Lister
Ms. Josephine B. Paulson
Mr. Donald E. Turner
Mr. Andrew H. Williams
Miss Jean M. Williams

Wisconsin
Ms. Ethel K. Allen
Miss Marian A. Kerr
Mrs. Patrick J. Nelis
Mrs. Ruth C. Noland

Foreign
Mr. Dan E. Mayers

NEW CORPORATE ASSOCIATES

A corporation becomes a Corporate Associate of The Nature Conservancy upon contributing between $1,000 and $10,000 annually to the operations of the organization.

Arvida Corporation
Florida

City National Bank & Trust Company
Ohio

Commerce Union Bank
Tennessee

International Minerals & Chemical Corp.
Illinois

RCA
New York

Sweco, Inc.
California

The N L Industries Foundation, Inc.
New York

Union Carbide Corporation
New York

Yoder Brothers, Inc.
Ohio

THE NATURE CONSERVANCY

Eastern Regional Office
294 Washington Street, Room 850
Boston, Massachusetts 02108
(617) 542-1908
Bradford C. Northrup, Vice President

Southeast Regional Office
148 International Blvd., N.E.
Atlanta, Georgia 30303
(404) 659-0240
Riesley R. Jones, Vice President

Midwest Regional Office
328 East Hennepin Avenue
Minneapolis, Minnesota 55414
(612) 379-2134
John W. Humke, Vice President

Western Regional Office
425 Bush Street, 5th floor
San Francisco, California 94108
(415) 989-3056
Henry Little, Vice President

New York Development Office
36 West 44th Street, Room 307
New York, New York 10036
(212) 869-9532
William B. Carlin, Director

Mid-Atlantic Field Office
1800 North Kent Street
Arlington, Virginia 22209
(703) 841-5300
Steve Hamblin, Representative

Northwest Field Office
1234 N.W. 25th
Portland, Oregon 97210
(503) 228-9561
Spencer Beebe, Representative

California Field Office
425 Bush Street, 5th floor
San Francisco, California 94108
(415) 989-3056
Peter Seligmann, Representative

Colorado Field Office
820 Sixteenth Street, Suite 420
Denver, Colorado 80202
(303) 623-8088
Sydney Shafroth, Representative

Florida Field Office
10395 S.W. 132 St.
Miami, Florida 33176
(305) 238-0148
Dick Ludington, Representative

Hawaii Field Office
P.O. Drawer 4528
Honolulu, Hawaii 96813
(808) 531-0408
J. Hamilton Tabor, Representative

Indiana Field Office
Route 1, Box 155
Nashville, Indiana 47448
(812) 988-7547
Dennis Wolkoff, Representative

Maine Field Office
51 Chapel Street
Augusta, Maine 04330
(207) 622-3101
John W. Jensen, Representative

Michigan Field Office
Suite F, 531 N. Clippert Street
Lansing, Michigan 48912
(517) 332-1741
Michael L. Green, Representative

Minnesota Field Office
328 East Hennepin Avenue
Minneapolis, Minnesota 55414
(612) 379-2134
Geoffrey S. Barnard, Representative

Mississippi Field Office
P.O. Box 5556
Meridian, Mississippi 39301
(601) 693-2886
Rick Fortenberry, Representative

North Carolina Field Office
P.O. Box 805
Chapel Hill, North Carolina 27514
(919) 967-1406
Thomas Massengale, Representative

Ohio Field Office
1504 West 1st Avenue
Columbus, Ohio 43212
(614) 486-4194
David Younkman, Representative

THE NATURE CONSERVANCY

Land conservation through private action.

National Office
1800 North Kent Street
Arlington, Virginia 22209
(703) 841-5300

NON-PROFIT ORG.
U.S. POSTAGE
PAID
PERMIT NO. 9388
WASHINGTON, D. C.

Oregon Field Office
1234 N.W. 25th
Portland, Oregon 97210
(503) 228-9561
Graham Wisner, Representative

South Carolina Field Office
P.O. Box 5475
Columbia, South Carolina 29250
(803) 254-9049
La Bruce Alexander, Representative

Tennessee Field Office
720 West End Avenue, Suite 600
Nashville, Tennessee 37203
(615) 320-1465
Tim McCall, Representative

West Virginia Field Office
1100 Quarrier Street, Room 215
Charleston, West Virginia 25301
(304) 345-4350
Frank Pelurie, Representative

Connecticut Chapter
Science Tower, Box MMM
Wesleyan Station
Middletown, Connecticut 06457
(203) 344-0716
Evan Griswold, Director

Illinois Chapter
666 N. Lake Shore Drive
Suite 1919
Chicago, Illinois 60611
(312) 787-1791
Neil Gaston, Director

Long Island Chapter
P.O. Box 72
Cold Spring Harbor, New York 11724
(516) 367-3225
Charles Bassett, Director

Eastern New York Chapter
196 Morton Avenue
Albany, New York 12202
(518) 465-7768
Kristine Kelly, Director

Lower Hudson Chapter
RFD #2, Chestnut Ridge Road
Mt. Kisco, New York 10549
(914) 666-5365
David L. Weld, Director

150884J 1K 00 006 7908
MR & MRS RICHARD GOODWIN
BOX 1445
CT COLLEGE
NEW LONDON CT 06320